

CHOICE

Will you burn this summer?

'Sunscreen' fabrics put to the test



**HOW TO AVOID
MOZZIE BITES**

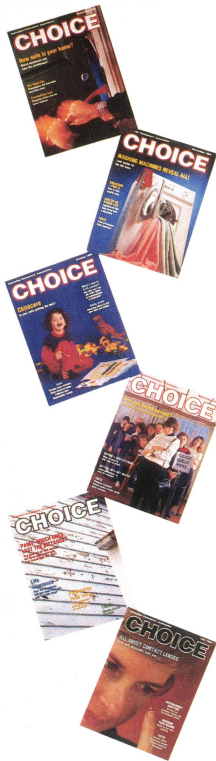
Which repellents
work best?

HOME OR AWAY?

How to choose where
to live when you're
older

TESTS

Portable stereos
Chipper/shredders



Editorial

WOULD YOU VOLUNTARILY put your arm into a cage of 500 mosquitoes to see if they'd bite you? That's what the volunteers in our test of mosquito repellents did (see page 29) — six times for each product over periods of several hours. We wish for their sakes we could say all the repellents were star performers, but unfortunately there were big differences in mozzie resistance. Some offer five or more hours of protection against bites, while others were effective for less than an hour.

We didn't test the cotton T-shirts and lycra 'rash' shirts for their sunscreen potential (page 6) on live volunteers — there's too much risk of skin damage from exposure to ultraviolet radiation. But we could measure how much UVR passed through a fabric, and our results show that if you've been thinking your cotton T-shirt will protect you from sunburn while you're on the beach, you could be in for an unpleasant surprise.

Other surprises — pleasant or unpleasant — could come from our comparison of credit card costs in our new regular money column, *Your Money* (page 11). It'll help you balance all the variables like annual interest rate, interest-free days and annual fee to come up with a credit card that really suits your needs.

In this first issue of the new year we also offer advice on coping with the system if you're an older person trying to make the choice between staying at home and moving out (page 14). For keen gardeners there's a test of chipper/shredders — which turn garden and household waste into valuable mulch (page 42) — and for the January sales we have a test of portable stereos/CD players (page 37).

We hope you enjoy a burn and bite-free summer, and wish you all the best for the new year.



Jane Mackenzie
Editor

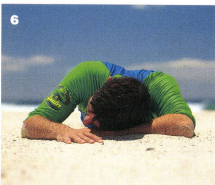
Who are we?

CHOICE EXISTS TO HELP YOU MAKE DECISIONS. It might be a question of which washing machine or fridge to buy, or which insurance policy or bank account to choose. It might be a case of giving you enough information about areas such as health, food and nutrition that you feel confident your decisions are based on sound knowledge. The reason you can rely on CHOICE is that the only interests we represent are yours — the consumer's.

We're not a government department or agency, and we get no ongoing funding from any government. Neither do we receive any subsidies from industry, manufacturers, unions or any other group, and we don't take any advertisements in the magazine. CHOICE survives purely because people like you subscribe to it: 85% of our income is from CHOICE subscriptions, and the rest from sales of our Consumer Bookshelf and CHOICE Books, plus some special technical services such as testing appliances for their energy efficiency labelling. So we're independent in the true sense of the word: beholden to no-one but the consumers we represent and who keep CHOICE alive.

The organisation behind CHOICE is the Australian Consumers' Association. This does more than just publish CHOICE: we represent consumers' interests at federal and state government levels as a balance to the influence of manufacturers and service providers. You can become a voting member of the Consumers' Association as well as a CHOICE subscriber if you wish. The small extra membership fee you pay demonstrates your commitment to the rights of consumers, and gives you a subscription to a second magazine — either *Consuming Interest*, our publication covering broader consumer policy, or *CHOICE Travel*.

Around 70 people work at CHOICE in roles ranging from processing your subscriptions to testing the appliances, answering consumer queries, writing the articles in CHOICE and *Consuming Interest*, and representing consumer interests in the public arena. We're here because you think you need us, you trust us and are prepared to pay to keep us going.



Cover photo: Kent Mears

**Next issue**

Video recorders, takeaway sandwiches, electric timers, guide to wood, nutrient labelling on food, refunds, update on mosquito repellents.

March, April, May

Tests: Portable CD players, bread, sports drinks, dishwashers, 51 cm TVs, children's car restraints, overlockers, electric heaters, exterior house paint.

Surveys: Car reliability, financial planners, car insurance, how green is your home?

Reports: Food storage; living with a disability; CDs — more than music; lead: who is at risk?; eating kangaroo meat; air pollution; property: renting vs buying.

Choice Regulars**4 Choice Cuts**

Commonwealth Bank charges; re-tyred Landcruisers; 'made in Australia' labelling; sports injuries; CHOICE in Cyberspace.

11 Your Money

What your credit card costs, and how to choose the best one for your needs.

22 Consumer-in-law

The introduction of contingency fees should make access to justice easier for people with little money to spare.

25 Bodywise

You can now save money by asking your doctor or pharmacist to give you a cheaper version of the same drug. Is this likely to cause you any problems?

34 Consumer Bookshelf**46 What do you know?**

Test yourself with our consumer quiz.

47 Recalls and bans**Choice Reports****12 The EnergyCard muscles in**

The Commonwealth Government's new EnergyCard will make it cheaper to afford a new solar hot water system on credit. How does it work, and will it really save you money?

14 Right at home: options for older people

The older we get, the more likely we are to need some help looking after ourselves. Nowadays the trend is for help to come to you in your home rather than you having to move out, but what help is available, how do you find it and is there enough of it?

Choice Tests**6 Sunscreen fabrics: Summer dress rules**

More and more summer clothes are starting to be labelled as having a degree of 'sun protection' — like sunscreens, they're claimed to stop you burning for a certain number of hours. Can you trust the labels, and do labelled garments in fact give any more protection than unlabelled ones?

29 Mosquito repellents: 'Ave a DEET weekend?'

Some mozzie repellents simply don't work. Others contain such high concentrations of the chemical known as DEET that they could be poisoning you along with the mosquitoes. Which mozzie deterrent should you buy?

37 Portable stereos

How much portable sound does \$400 buy? We looked at eight portable stereos with a CD player in this price bracket and found a range of different features on offer.

**42 Chipper/shredders**

Like a giant food processor, a chipper/shredder will reduce a heap of garden and household waste to a neat (or in some cases not so neat) pile of mulch for your garden. We found some major differences in performance and ease of use among the 12 models we tested.



CHOICE CUTS

Bank charges

NO MORE FEES PLEASE!

WHEN will it end? Do the banks really expect us to keep tolerating more and more fees for using their services — especially at a time when the margins between what they charge to lend money and what they pay out on deposits, not to mention their profits, are huge? The Commonwealth Bank's recent decision to start charging customers a range of fees for using over-the-counter services feels like the last straw.

If you have a Commonwealth Streamline, Keycard Savings or Essentials account and your minimum monthly balance falls below \$500, you'll now be paying \$1.50 for every over-the-counter withdrawal you make after your first four each month. This transaction fee is on top of a \$2 monthly account-keeping fee. You can have eight free electronic or cheque withdrawals each month, after which you will be paying 25 cents for each transaction.

The Commonwealth Bank has introduced a new account, called Streamline Express, which offers

free withdrawals if you use an automatic teller machine — but there's a \$4 charge if you withdraw money over the counter.

Passbook savings account customers will incur similar fees. If you have a passbook, you will have six free over-the-counter transactions before you have to start paying the \$1.50 fee. Again, the transaction fee and the \$2 account-keeping fee only apply if your balance falls below \$500.

The Commonwealth Bank's general manager of personal banking, Mr Ed Feder, offered the following explanation for the introduction of the new fees: "The restructure of transaction and account-keeping fees reflects changing customer needs and a competitive environment which increasingly dictates against cross-subsidisation and towards pricing for value."

You will be exempt from the fees if you have a home loan with the Commonwealth, if you're under 21 years old, you're a tertiary student, if you have a Common-



wealth Bank investment account with a balance of \$2000 or higher, or if you maintain a minimum monthly balance of \$500. Aged pensioners and war veterans with existing exemptions will continue to have them.

CHOICE believes the fees will have a significant impact on many ordinary customers who find it difficult to keep their account balances above \$500 continuously. We also fear that older people with small balances in passbooks — people who don't feel comfortable using automatic teller machines —

will end up paying these exorbitant fees, simply for talking to a bank teller.

Perhaps it's time for Commonwealth Bank customers and shareholders to demonstrate their concern over escalating service fees. You feel strongly about this issue, consider changing banks, or perhaps going to a credit union which has fewer and lower fees. Otherwise you could write to Ed Feder at the Commonwealth Bank head office and lodge your concerns. Write to GPO Box 2719 Sydney 2001.

Motoring

RE-TYRED LANDCRUISERS

If you've purchased a new Toyota Landcruiser in the last few years, you may be in for some problems with baldness. We're not referring to hair loss, but a form of tyre baldness called 'step down' wear.

From mid-1992 until recently

some new 80 series Landcrisers have been fitted with Dunlop Grandtrek 275 16-inch tyres, which have subsequently been found to be unsuitable for use on the big four-wheel-drive.

The problem is the tyres can

suffer premature wear on their outside edges. They are designed to be quite 'soft' to give a comfortable ride, but the weight of the Landcruiser causes the soft outer edges to erode quite quickly, causing a pattern of wear similar to what you might find when tyres have been underinflated. The wear can be quite noticeable on tyres which have done as little as 6000 km, depending on the type of driving done.

Toyota is aware of the problem, and a spokesperson claims: "The condition relates to the wear characteristics only and has no adverse effects on any other aspect of tyre performance." Toyota also claims the accelerated wear will mainly affect people who do a lot of driving at highway speeds on sealed roads. A spokesperson for the Federal Office of Road Safety says it

looked into the problem, but agrees with Toyota that there is an inherent compromise of safety with the tyres, they just wear out faster.

After investigations both here and in Japan, the tyre concern has been modified, and a new design has been in production since August 1994. For those who suspect that their Landcrisers are fitted with the old design, Toyota is offering conditional replacement of the affected tyres. For vehicles which have travelled under 25,000 km, it will replace all five tyres free of charge. Between 25,000 and 60,000 km it will charge a portion of the replacement cost depending on the exact distance travelled. Contact your local Toyota dealer for more information.

If you have a late-model Landcruiser you should check your tyres for premature wear.



LABELLING BATTLE CONTINUES

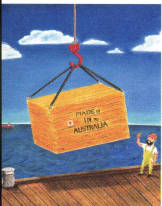
THE campaign for truth in labelling continues. At the time of writing the Commonwealth Government had failed to grasp the point that consumers expect "Made in Australia" to mean goods are wholly made in Australia.

The Trade Practices (Origin Labelling) Bill, which is supposed to stamp out the abuse of misleading labels, defines "product" and "produce" of Australia to mean

wholly Australian, but allows "made in Australia" to be used for goods (including foods) merely assembled or processed here from imports.

Fortunately for consumers, the federal opposition has taken the point and decided to put forward amendments to the proposed legislation so that, if the bill goes through, manufacturers would only be allowed to use "made in" to describe genuine 100% Australian products. Goods manufactured from imports or a mixture of Australian and imported ingredients would be labelled "manufactured in Australia".

As we go to press, the outcome is not known, but with support from the Australian Democrats, the bill should be amended in the Senate. It is up to the Minister for Consumer Affairs, Jeannette McHugh, to decide whether to accept the common sense of the amendments or allow the bill to fail and the current labelling abuse to continue.



Sports injuries

DON'T BE ONE-EYED ABOUT YOUR SPORT

A RECENT report in the *Medical Journal of Australia*, by Dr Lye Pheng Fong and the Department of Ophthalmology at the University of Melbourne, gives insightful information about sports-related eye injuries. Statistics were gathered over a two-year period for patients treated at the Royal Victorian Eye and Ear Hospital.

Most eye injuries arose from squash — in particular impact by the ball rather than the racket. The ball is small enough to make a high-powered contact with the eye and compress the eyeball. In fact the ball can move at speeds of up to 230 kilometres per hour.

Badminton injuries are quite similar due to the size of the head of the shuttlecock. It may look like a delicate object, but it can travel at speeds approaching that of a

squash ball. When you account for the smaller number of Australians playing badminton compared to squash, the injury rate is much the same for the two games.

On a relative participant basis, football is another sport with an eye injury incidence rate similar to squash. However, contact sports like football and basketball are more likely to result in external injuries to the eye — lid lacerations and bruising, and corneal abrasions.

If you decide to protect your eyes during racquet or ball sports it's a good idea to seek out the best protective eye wear — don't wear your ordinary prescription glasses as they may shatter too easily. If you're a serious player you can get prescription safety lenses made up.

YUPPIE SQUASH PLAYING ETIQUETTE

NOT SO FAST, PEMBERTON, THE CLIENT ALWAYS GETS THE FIRST AMBULANCE



CHOICE IN CYBERSPACE

If you have a computer and modem, it's now possible to get information about CHOICE electronically via the Pegasus network. Pegasus is the Australian part of a global computer network under the umbrella of the Association for Progressive Communications (APC), an organisation launched in 1990 to facilitate the linking and expanding of computer networks dedicated to social, political and environmental issues. Networks linked under APC include PeaceNet, EcoNet, GreenNet and The Web, among others.

The information on Pegasus is arranged in a series of what are called 'conferences'. The conferences cover a wide variety of subjects and are set up to allow individuals or organisations such as ourselves to leave or read information related to the particular conference topic.

We've set up our own conference, called *choice.magazine*, which contains our book catalogue, abstracts of some of our current books, an index of topics covered in our policy magazine *Consuming Interest* and copies of press releases for current issues of CHOICE. We're also including an index of the last 12 months' worth of CHOICE articles, which will be updated monthly as soon as the magazine comes off the press. You'll also be able to get copies of forms for ordering books or subscribing to CHOICE.

To be able to get at the information you'll need to be a subscriber to a bulletin board or network which has access to Pegasus. Our conference is read only — you can read the information but you won't be able to leave messages. For those with the ability to use e-mail (electronic mailing), however, we now have an e-mail address. You can send messages to us at: ausconsumer@peg.pegasus.oz.au.

Can you help?

MINISTERS FOR CONSUMER AFFAIRS

It's that time of the year again when we put the spotlight on all Australian consumer affairs ministers. We put them to the test.

We'd like to hear from you about your experiences with and opinions of the consumer affairs minister in your state and the federal minister. For example, how often have you noticed the minister addressing consumer issues on television, radio or in the newspaper in the last year? Have you seen any published consumer education material in the last 12 months which aims to explain consumer rights? Can you recall any public awareness campaign initiated by a consumer affairs minister and what it was about? Are there any issues you feel strongly about but your consumer affairs minister has not taken up?

If you'd like to take part in this project, please write to **Consumer Affairs Ministers' Review**, CHOICE, 57 Carrington Road, Marrickville 2204. We need your contributions no later than **January 30, 1995**, so we can include them in the May issue of *Consuming Interest*, our quarterly policy magazine. Thank you for your help.

Corrections

SHOPPING AROUND

(CHOICE, September 1994)

On page 12 we reported the price of petrol in Hong Kong as 90 cents (Australian) a litre; this price neglected to include tax, so the real price is closer to \$1.50.

On the same page we quoted the price of an urban 5 km train fare in Hong Kong as 20 cents (Australian). The Hong Kong Consumer Council has told us it made a mistake in the price it gave to us; it should have been 52 cents.

BABY MONITORS

(CHOICE, November 1994)

In the photograph of baby monitors on page 36, the two Babycom models have the wrong text underneath them: the **BABYCOM Two-Way Nursery Monitor 6200** is pictured above the profile of the **BABYCOM Mobile Baby Monitor 5730-AD**, and vice versa.



Summer dress rules

We assessed the level of sun protection provided by 23 brand-name T-shirts and lycra 'rash' shirts. Our conclusions? Garments with sun-protection labels don't always give the highest levels of protection from ultraviolet radiation.

COULD our growing preoccupation with sun protection be leading to the resurgence of the neck-to-knee cozzie? Fashion does have a habit of repeating itself and it seems swimwear is no exception. The concealing neck-to-knee bathing costume is already making a comeback. The original version was worn to protect modesty, but in the 1990s the preferred fabric is lycra and our only motive is to protect our skin from the damaging effects of ultraviolet radiation (UVR).

Traditionally we have not been very good at protecting ourselves from the high levels of UVR present in Australia. For decades we chose to slather ourselves in oil and spend hours literally baking in the harsh summer sunshine. As a result we have extremely high levels of skin cancer: over 1000 people die from it in Australia each year.

In recent years summer campaigns by anti-cancer organisations have made us much more aware of the potential

hazards of too much exposure to UVR. We've started to take positive steps to protect ourselves, including using sunscreens, sunglasses, hats and protective clothing.

It's safe to assume that all types of clothing provide some UVR protection but lightweight summer fabrics may not be providing enough. Somewhere in between the flimsy T-shirt and the restrictive neck-to-knee there must be a happy medium! How can you be sure of the degree of protection you're getting when you slip on that shirt? Is it worth only buying garments with sun-protection labels? Are the claims made on garment labels accurate and useful?

The labels give an ultraviolet protection factor (UPF) or sun protection factor (SPF) for the garment. In conjunction with the Australian Radiation Laboratory (ARL, part of the Commonwealth Department of Human Services and Health), we tested a range of UPF and SPF-labelled and unlabelled rash shirts

and white cotton T-shirts (see *What we tested* on page 10) to determine the level of sun protection provided by each. Our aim was to see if there is a variation in protection provided by different types of fabric and within fabric types, and in the level of protection given when garments are wet and dry. We'll also show you the main factors that determine the level of sun protection offered by different types of fabric so you can make some educated guesses when shopping.

Why worry about sun protection?

Scientific studies have shown a link between the effects of UVR from the sun and damage to human skin. UVR penetrates the outer layer of the skin (the epidermis) and injures living cells, causing a burning sensation on the skin. Pigment-producing cells in the skin (melanocytes) respond by producing and disseminating darker pigments called melanin. Most caucasian Australia-

lians have skin which is highly susceptible to sun damage because it produces small amounts of melanin.

If fair-skinned people are out in the sun without protection at noon on a summer's day they'll start to develop sunburn in 15 minutes or less. There are, however, ways to lessen the risk of skin damage by UVR. Some general guidelines from the Australian Radiation Laboratory are:

- It's important to minimise exposure. Try to arrange your activities so you are indoors between 11 am and 3 pm (daylight saving time) or 10 am to 2 pm (standard time) during the summer.
- Stay in the shade whenever possible when you're outdoors.
- Always wear a wide-brimmed hat (not a loose-weave straw hat) and good-quality sunglasses.
- Apply an SPF 15-plus sunscreen to the unprotected areas of your body.
- Wear protective clothing.

What's available

What types of protective clothing are available in Australia? It's true that all fabrics give some protection from ultraviolet radiation, but it can be difficult to tell exactly how much protection you can expect from a fabric just by looking at it or touching it. To help you choose clothing that offers a high level of sun protection, a number of organisations have set about developing individual sun-protection labelling schemes for garments in recent years. However, since these schemes aren't consistent with each other, they're not really much help to shoppers.

This is because the Australian Standard for the sun-protection rating of fabrics is still at a draft stage (see *Labelling schemes* overleaf for more information). So different groups developed different labels. That's why when shopping for your summer clothing, you may encounter garments that have either SPF or UPF labels; the SPF ratings can be as high as 100+.

To standardise labelling schemes and help you assess the level of sun protection offered by different types of clothing, two of the bodies involved in the development of labelling schemes, the Australian Radiation Laboratory and Unisearch (University of NSW), recently decided to use a uniform ultraviolet protection factor rating when assessing different fabrics with a view to issuing sun-protection labels. These UPF ratings are based on how much UVR is transmitted through the fabric, and they're an indicator of its protective ability.

Unisearch, the Australian Radiation Laboratory and other groups are hopeful that a uniform UPF 50+ maximum will be adopted in the Australian Standard, but this is not a foregone conclusion.

Not many clothing designs carry UPF or SPF labels; some rash shirts do. For non-surfing readers, a rash shirt is a fitted lycra T-shirt, usually with a high neck and the seams on the outside. They were originally worn by surfers to stop them from getting a rash on their chest caused by rubbing up against the board, and are now popular with children for the beach. They come in both long and short-sleeved styles; some have a tail at the back to protect the wearer when bending over or even a frill around the bottom for girls. Some 'spring suits' or body suits also have UPF labels. These are an all-in-one design like a wetsuit, with long or short arms and legs and with a zip at the back or front. A few traditional T-shirts are also labelled.

Testing the claims

We tested samples of UPF and SPF-labelled rash shirts and the one labelled T-shirt we were able to buy to check that they performed according to their labels (see *What we tested*). We also tested a range of unlabelled rash shirts and T-shirts to see how they compared.

The only T-shirt brand with a UVR protection factor label included in the test — the STINGRAY — did not live up to its labelled claim of SPF 20+. While the calculation of UPF or SPF ratings allows for a margin of error, based on the results from our tests the label this brand should have obtained when it was submitted for labelling would have been 15, not 20+ as claimed.

This result highlights the potential for a high level of variation in the quality of fabric used in T-shirts, and this can happen even within the one batch. Samples which are tested for UPF or SPF rating purposes are supposed to be representative of the quality of the whole batch of fabric from which garments to carry the label will be cut. But our test results show variations can occur at different sites in the same piece of material.

All the labelled rash shirts met their labelled claims and in most cases these claims were conservative. The highest labelling claim for a rash shirt was on a brand which claimed to offer protection of SPF/UPF 100+, both wet and dry. For the dry values, readings were at least five times this claim; the wet values were at least double the claim.

You'll get more protection from UV radiation from a lycra 'rash' shirt than a cotton T-shirt, but you'll probably be more comfortable out in the sun in the T-shirt.



Labelled vs unlabelled

Is there a difference between the UPF/SPF values of labelled and unlabelled garments?

The unlabelled T-shirt samples gave a wide range of sun-protection values. The highest readings were given by the DAVID JONES brand; they were far higher than for any other T-shirt brand.

As noted, our tests cast some doubts over the claims made for the only T-shirt we tested with an SPF label. The STING-RAY provided no additional sun protection to most of the unlabelled T-shirts and the sun protection it claimed to provide was not reliable. It is important that manufacturers ensure the quality of the fabric is consistent throughout.

There was only a slight difference between the lowest values for the labelled and unlabelled rash shirts, and both measured above the ARL/ Unisearch labelling scheme's maximum sun protection rating of UPF 50+ (see *Labelling schemes* below for more informa-

tion). UPFs or SPFs don't increase on a linear scale; for UPF/SPF values between 50 and 100, for example, there's only a further reduction of around 1% in UVR transmission, and at UPF/SPF 50 the fabric already blocks out 98% of UVR. There's therefore very little point in labelling or looking for higher values than 50.

Wet, dry and redried

What happens to sun-protection levels when T-shirts are wet or laundered? Without exception, average sun-protection values for T-shirts were lower when the samples were wet than when they were dry. The range of UPF values for the wet T-shirt samples was between 3 and 43. Once again, the highest value was provided by the DAVID JONES brand. In some cases, the differences between the sun-protection rating for dry and wet were only slight, but in others the level of sun protection offered by a fabric sample was more than halved when it was wet.

So wearing a T-shirt in the water is no guarantee you won't get sunburnt.

After the T-shirt samples had been laundered and allowed to dry, all but one gave higher UPF readings than for their initial dry tests. This is probably due to some shrinkage in the fabric. Shrinkage reduces the gaps between fibres in a garment so less sun is able to penetrate the 'pores' of the T-shirt. The samples were then wet again following the laundering process and the level of protection was found to be similar to when they were initially wet.

What happens to the level of sun protection when rash shirts are wet? In our samples the effect was not consistent: in some the UPF was increased, in others the level dropped. However, in all samples the UPF remained well above 50.

Does the fabric make a difference?

If the advantages of buying garments with UPF or SPF labels are limited, how else can you assess the level of sun protection provided by different garments? Two things may make a difference: the type of fabric and its construction (woven or knitted, for example).

Research by the University of NSW suggests that the type of fibre used to construct a fabric can have an influence on its UPF rating, especially for white or undyed fabrics. The research shows that some fibre types offer relatively low levels of protection from UVR — for example, white fabric woven from bleached cotton and viscose. A fabric woven in the same way but using pure cotton would provide a higher level of protection because the natural pigments and lignins in cotton act as UVR absorbers. Our tests show that lycra generally provides an even higher level of sun protection.

Some research suggests the construction of the fabric may also affect the transmission of UVR. More closely woven fabrics transmit less UVR than those that are loosely woven. Most woven fabrics are difficult to stretch, and variations in the measurement of their UVR rating are minimal. On the other hand, many knitted fabrics — like those commonly used for T-shirts — are susceptible to stretching and their ratings will vary considerably depending upon the tension: the greater the stretch, the lower the UPF rating.

However, Australian Radiation Laboratory testing suggests that the range of UPF values is wide within fabric type regardless of what type it is.

LABELLING SCHEMES

Sun-protective clothing is a relatively new product and the absence of an Australian Standard has led to different organisations using different labelling schemes. This has caused consumer confusion about what the different labels and ratings mean. In addition, many manufacturers have been resisting labelling their products until there is an official Australian Standard.

In an attempt to reduce consumer confusion, two testing authorities, the Australian Radiation Laboratory (ARL) and Unisearch, recently agreed to standardise their

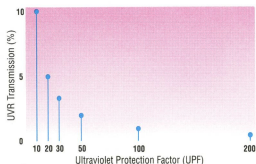
UVR protection category	UPF
Moderate protection	10 to 19
High protection	20 to 29
Very high protection	30 to 49
Maximum protection	50+

ultraviolet radiation protection rating schemes. The UVR protection claims given to fabrics tested by both laboratories are now called Ultraviolet Protection Factors (UPF). The UPF rating scheme is illustrated in the table. The UPF rating of a particular garment is indicated on a swing tag attached to it.

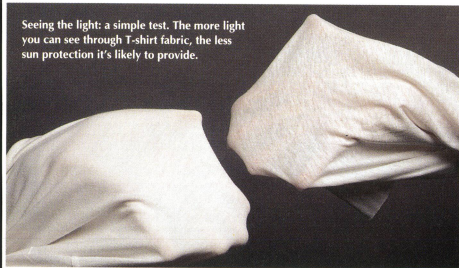
In the past some brands have claimed to provide UPF100+ protection, but the agreement between ARL and Unisearch has limited the maximum protection level which can be shown on a label in their scheme to UPF 50+. The graph shows the level of protection offered by different UPF values. At UPF 10 most of the absorption has taken place and thereafter there are only small increases in the amount of UVR absorbed by the fabric. Above UPF 50 the increase in level of absorption is minimal. For UPF values between 50 and 100, for example, there is only a further reduction of around 1% in UVR transmission, so it is hardly useful to

give labelling information for values above UPF 50.

A draft Australian Standard covering the evaluation and classification of sun-protective clothing was issued for discussion in August last year, so a final version of the Standard should be agreed soon. There are other standards which cover the protection offered by synthetic shade cloth, sunscreens and sunglasses.



Seeing the light: a simple test. The more light you can see through T-shirt fabric, the less sun protection it's likely to provide.



Does the colour make a difference?

The colour of a fabric can have a significant effect on its sun-protection performance. Darker-coloured fabrics tend to transmit less UVR than lighter ones of the same type, so in general they offer higher UPF ratings than lighter ones.

Does the weight make a difference?

The weight of the fabric can also be a factor in determining its sun-protection qualities. If the type of construction (weave or knit) of two pieces of fabric is identical, a thicker, weightier one will transmit less UVR. The high UPF rating for the DAVID JONES T-shirt in this test is related to its weight. However, light, closely woven fabrics can sometimes provide higher UV protection than heavyweight but coarsely woven ones.

The comfort factor

The type of fabric you choose is important for comfort as well as UV protec-

tion. The body cools itself by the evaporation of perspiration. If the fabric holds perspiration against the skin, your body can't cool itself efficiently. To be totally effective, garments must be comfortable to wear, otherwise people — especially children — will simply take them off.

Lyra, for instance, generally has a high UV protection rating but it doesn't allow for evaporation of perspiration, so the wearer becomes hot and clammy. This means it's most suitable for the beach or pool, where the wearer is constantly in and out of the water. If worn all the time in hot weather it becomes uncomfortable.

A fabric with a thick weave may provide a high level of sun protection, but the thicker the fabric, the hotter and less comfortable it will be to wear. Likewise, darker colours also tend to be hotter than lighter ones and therefore less popular in the summer.

The trick is to work out a good compromise: maybe lyra for the beach, replaced by a loose, lightweight but closely

woven/knitted T-shirt or shirt for other times you're out of doors in the sun.

No guarantee

Having an anti-cancer organisation's brand name instead of a UPF label doesn't necessarily guarantee a high level of protection from ultraviolet radiation. For example, we purchased an unlabelled 100% cotton T-shirt from the NSW CANCER COUNCIL and its UPF was measured at only 14 — giving only moderate rather than maximum protection. The Cancer Council says it no longer sells the T-shirts we tested and now specifies that the fabric for its T-shirts has a UPF of 50+.

Touchy-feely

It's all very well to say that the type of fabric (such as lyra or cotton) and the weight, weave and colour will all influence the level of protection from UVR a garment can provide. But how easy is it to detect the level of sun protection given by different T-shirts and rash shirts by looking at them and feeling them?

Most lyra rash shirts seem to give adequate protection. The ARL reports that some thin lyra has been found which only has a UPF of 10, but all the rash shirts in our test gave maximum protection, so you can generally buy lyra and be confident it will have a high protection factor.

The cotton T-shirts we tested, however, in general offered much lower levels of protection, so we conducted a small trial to assess if people could detect different levels of protection given by different white T-shirts with their hands and eyes.

Our trialists found it reasonably easy to place the T-shirt fabric samples in the correct order; six out of 10 of them

SHIRTS vs SUNSCREENS

What's the difference between SPFs on sunscreens and UPFs used by Unisearch/ARL to label fabrics? The rating for fabrics is analogous to the familiar SPF rating for sunscreens. A sunscreen with an SPF of 10 will provide as much protection as a shirt with a UPF of 10, but as you might expect, the range of protection available is very different: 10 to 50+ ratings for fabrics compared with 2 to 15+ for sunscreens. If you have a skin type which usually burns after about 15 minutes in the sun, the time you can spend in the sun before burning when wearing a UPF 10 T-shirt or an SPF 10 sunscreen would be the same: two and a half hours (10 x 15 minutes).

The test method used to determine an SPF rating for a chemical sunscreen is *in vivo* — testing is conducted on human skin. Assessment of the sun protection provided by different

fabrics is based on *in vitro* testing, using a spectroradiometer or spectrophotometer. There's no program for testing fabrics *in vivo* at present and Unisearch and ARL are proposing the label 'SPF' should only be used for this method of testing.

UPF ratings are for the fabric and don't address the amount of protection which is afforded by the design of actual garments — for example, long, short or no sleeves. The protection offered may be lessened at points where the fabric is in close contact with the skin, such as across the shoulders, or if the fabric is stretched or wet. The level of protection may also decrease with time as the garment wears out. However, unlike with sunscreens, the protection you get from clothing doesn't wear off in the short term.

identified the correct sequence of sun protection offered. All trialists identified the sample giving the lowest sun protection and eight out of the 10 the one with the highest protection.

Although the majority of our trialists could detect a difference in the cotton samples and correctly order the level of sun protection given, experts in the field of sun protection suggest that visual inspection of a fabric is unlikely to allow you to estimate the actual level of UV protection provided. However, our trialists' intuition confirmed that one way you can tell whether one garment offers more protection than another when you're shopping is to hold a single layer of each up to the light to see how much light you can see through the fabric. The more light you can see, the more likely it is that UV radiation will also be able to pass through. However, remember this method really only works when you compare like with like.

WHAT TO BUY

Although lycra rash shirts aren't practical to wear in all situations, they generally gave higher protection from UVR than the 100% cotton T-shirts in our test. All the rash shirts we tested gave in excess of UPF 50, the highest rating allocated to fabrics under the Unisearch/ARL labelling scheme. This means they're a good choice for the beach.

The DAVID JONES T-shirts provided significantly higher UPF readings than all the other cotton T-shirts. David Jones says it employs strict specifications so its T-shirts are always 100% cotton jersey and weigh 210 g/m² before washing.

We could only buy one T-shirt brand with a UV protection rating to include in the test — the STINGRAY — and it didn't live up to its labelled claim of SPF 20+. This and our other results for T-shirts suggest that the level of protection you can expect from any T-shirt — labelled or unlabelled — can be variable.

In fact, our test results indicate that in the case of both the lycra rash shirts and the cotton T-shirts, the labelled garments didn't necessarily provide a higher level of protection than the unlabelled ones — so when you're buying, don't assume labelled garments are better than unlabelled ones in terms of sun protection. The main advantage of buying a UPF or SPF-labelled garment is that it takes some of the guesswork out of assessing the level of sun protection you can expect. □

WHAT WE TESTED

We tested two protection extremes of the summer clothing market: white T-shirts (expected to give low protection) and coloured rash shirts (expected to give high protection). Only one of the T-shirts purchased made any claims regarding sun protection; all the others were unlabelled in this respect. All the T-shirts tested were white and 100% cotton. The unlabelled T-shirt brands were Bonds 55, NSW Cancer Council, David Jones Sport, Hanes, Hot Tuna, Inspire (K Mart), Jeans Plus (Grace Bros), Mambo, Quiksilver, Target and Woolworths. The labelled T-shirt was a Stingray (claimed SPF was 20+).

We also tested 11 brands of lycra rash shirt. Eight of those were labelled with a UPF or SPF claim while three made no claims. Rash shirts are lycra garments used particularly by surfers to protect themselves from irritation by the surfboard. They also offer a high degree of protection from the sun and are increasingly being marketed for children to wear for sun protection when they're playing outdoors. All the rash shirts tested were royal blue or the closest colour to royal blue that we could buy.

The unlabelled rash shirts were the following brands: WA Cancer Foundation, Surf Dive 'N' Ski and Aloha. The labelled rash shirts were (claimed ratings are shown in brackets): Billabong (SPF 'Very High'), C Shirt (SPF/UPF 100+ wet or dry), Kuver Sun (SPF 100+), Quiksilver (UPF 40+), Rip Curl UVX (SPF15++++), Solarsuit (UPF 40), Stingray (SPF 80 plus) and Triplex (SPF 100+).

How we tested

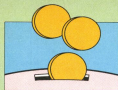
Where possible we bought five shirts from each brand. Samples were cut from the front and back of each garment purchased; each piece counted as a separate sample because we wanted to see if there was variability of protection even within the same garment. For most brands we tested 10 samples, although for five brands we could only buy enough shirts to test six. Four measurements were taken from each sample piece and an average calculated. Then an average for each brand was calculated from these values.

A spectroradiometric scan was used to measure the amount of ultraviolet radiation passing through the fabric, across a wavelength which included both UVA and UVB radiation. The sample of fabric is placed into the machine, a beam of light is shone onto the fabric and then all the UV light (both transmitted and scattered radiation) is collected after passing through the fabric. The measured results are therefore the total UV radiation which passed through each fabric sample.

All the samples were tested in their original dry state. They were then wetted and tested again to assess any change in sun protection offered from the dry state. The T-shirt samples were then laundered under controlled conditions using a detergent (without optical brighteners), dried and pressed. Another dry measurement was then taken from each sample to determine if laundering changed the protection value of the sample. Finally the sample was again wetted to see if there was any change from the initial wet reading. Rash shirt samples were only tested in their initial dry and wet states.



Some of the T-shirts and rash shirts we tested.



Your money

What does your card cost?

MAJOR BANKS HAVE BEEN PUTTING their credit card interest rates up. If you have a card with ANZ or the Commonwealth you've been paying a higher rate for a month now. If your card is with BankWest or Westpac, the rates shown in our table below have been effective from January 1, 1995.

Use the table, from Market Infotax, to find out exactly how much you're

paying for that 'precious' little piece of plastic. (Call Market Infotax helpline, 008 815 877, for more information.)

How does your card compare with those from other banks? Or perhaps your current bank has a different card that would give you a better deal. As a guide, if you have an outstanding balance on your credit card each month, look for a card with a comparatively

low interest rate. In your circumstances, getting a low rate is far more important than avoiding paying an annual fee or securing an interest-free period — but avoid cards that have a continuing credit charge from the purchase date. If you pay off your entire balance each month, look for a card with no annual fees and the longest possible interest-free period.

Banks are now "adding value" to their cards, so check out the value of features like a fee waiver before choosing or changing your card.

CREDIT CARDS: WHAT THEY COST

Bank/card type (in order of interest rate)	Annual rate (%)	Interest-free days	Minimum repayment	Annual fee (\$)	Credit charge*	Interest charged from?***	Annual fee waiver ***
STATE BANK NSW Visa	11.5	0	\$5 or 3%	0	na	na	na
ANZ Mastercard	12.95	0	\$10 or 3%	22	na	na	Yes
METWAY Visa	12.95	0	\$20 or 5%	0	na	na	na
BANK OF QUEENSLAND Bankcard/Visa/Mastercard	13.75	0	\$5 or 3%	0	na	na	na
ST GEORGE Visa	14	0	\$5 or 5%	0	na	na	na
NATIONAL Gold Mastercard/Gold Visa	14.45	25	\$10 or 3%	60	No	Purchase date	Yes
ADVANCE Visa	14.5/13.5 (A)	0	\$10 or 5%	0	na	na	na
BANK OF QUEENSLAND Bankcard/Visa/Mastercard	14.5	25	\$5 or 3%	20	Yes	Next statement	Yes
ANZ Visa	14.75	14	\$10 or 3%	22	No	Statement date	Yes
BANKWEST Visa Reward	14.75	0	\$5 or 2.5%	0	na	na	na
BANKWEST Visa Reward	14.75	40	\$5 or 2.5%	24	No	Statement date	Yes
CHALLENGE BANK Visa	14.75	0	\$10	0	na	na	na
COMMONWEALTH Bankcard/Mastercard/Visa	14.95	0	\$25 or 2.5%	0	na	na	No
COMMONWEALTH Gold Mastercard/Gold Visa	14.95	0	\$25 or 2.5%	28	na	na	Yes (B)
NATIONAL Bankcard	14.95	0	\$10 or 3%	0	na	na	na
NATIONAL Bankcard	15.45	25	\$10 or 3%	18	No	Purchase date	No
NATIONAL Mastercard/Visa	15.45	25	\$10 or 3%	24	No	Purchase date	Yes
BANKWEST Bankcard/Visa	15.75	0	\$5 or 2.5%	0	na	na	na
BANKWEST Bankcard/Visa	15.75	40	\$5 or 2.5%	24	No	Statement date	Yes
BANKWEST Mastercard	15.75	0	\$5 or 2.5%	0	na	na	na
BANKWEST Visa Gold	15.75	40	\$5 or 2.5%	80	No	Statement date	Yes
WESTPAC Bankcard	15.9	25	\$5 or 5%	18	Yes	Due date	No
WESTPAC Mastercard	15.9	0	\$5 or 5%	0	na	na	na
WESTPAC Mastercard	15.9	25	\$5 or 5%	18	Yes	Due date	No
WESTPAC Visa	15.9	12	\$10 or 3%	18	Yes	Due date	No
ANZ Bankcard	15.95	14	\$10 or 3%	22	No	Statement date	Yes
ANZ Gold Visa	15.95	25	\$10 or 3%	85	No	Statement date	No
ANZ Mastercard	15.95	14	\$10 or 3%	22	No	Statement date	Yes
ANZ Visa Paycard	15.95	0	\$10 or 3%	0	na	na	na
COMMONWEALTH Bankcard/Mastercard/Visa	15.95	25	\$25 or 2.5%	22	Yes	Due date	Yes (B)
COMMONWEALTH Gold Mastercard/Gold Visa	15.95	25	\$25 or 2.5%	50	Yes	Due date	Yes (B)
ANZ Visa Standby	16.95	0	\$10 or 3%	0	na	na	na
STATE BANK NSW Bankcard/Mastercard/Visa	17.25	25	\$5 or 3%	0	Yes	Due date	na

* Any amount not paid off by the end of the interest-free period will attract an initial credit charge of one month's interest.

** If the statement balance isn't paid by the due date, a continuing credit charge, calculated daily or monthly, is charged from this date.

*** Annual fee can be waived but check with bank for special conditions.

(A) Advance has a concessional rate of 13.5% pa for mortgage customers.

(B) For home loan clients.

na Not applicable.

The EnergyCard muscles in



The Commonwealth Government's new EnergyCard will make it cheaper for you to afford a solar hot water system on credit. It's a laudable example of lateral thinking but, as with most things governmental, there are a few leaks in the system.

"IT JUST COSTS TOO MUCH, so the environment will have to wait! I can't afford to go solar!"

It's unfortunate that switching to solar hot water has a high up-front cost. Whereas a gas or electric hot water system for a family home will set you back around \$900, you'll be looking at \$1900 (plus \$450-\$500 for installation) for the basic solar equivalent. Is solar only for yuppies?

No. In a place like Darwin where you're paying 12 cents per kilowatt hour for electricity, the motivation to change is compelling. You'll only be paying for energy if the electric booster is switched on to heat water when the sun's rays aren't sufficient for the job.

The EnergyCard is a clever and fresh approach to solving the problem of getting consumers into solar hot water. The Commonwealth Government, through the Department of Primary Industries and Energy, will make the purchase of solar hot water systems more affordable

through a special deal which will mean lower interest charges for anyone who borrows money to buy the system.

Eventually low-cost finance will be made available for other solar, renewable energy or energy-efficient products. Details are not finalised, but those involved are talking about reverse-cycle air conditioning and building products such as insulation and double-glazing. However, don't expect to see dishwashers or refrigerators on the Card, as it's likely there'll be a minimum purchase requirement of around \$1800.

Macquarie Bank will drive the expansion of the scheme through arrangements with manufacturers, while the Department of Primary Industries and Energy will have an ongoing role approving specific products as eligible. However, this second phase of the scheme will have to wait until the system is successfully up and running for solar hot water systems and pumps.

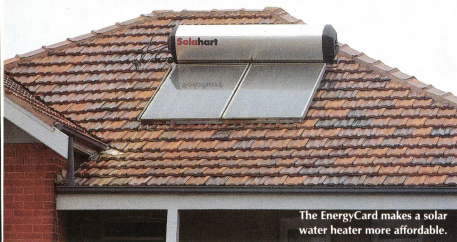
How it works

The first step is to go to the shop and choose a solar hot water system that's the right capacity for your home. The most common system sold in Australia will set you back approximately \$1900. It comprises two solar panels (the 'collectors'), a 300 litre storage tank (to hold the hot water), connecting pipes and valves, and fittings to attach the system to your roof.

The retailer will ask if you want an EnergyCard to assist with finance. If you say "yes", you'll fill in a credit application form, not unlike that for a credit card. If your credit is approved by the particular finance company involved in the plan (in this case Household Financial Services), the card becomes active. Household Financial Services acts as the retailer of the Card, and assesses the credit-worthiness of each applicant; a personal credit limit will be set. You can also get an EnergyCard from your electricity utility.

The interest rate you'll be charged is 9% per year. This compares favourably with current credit card rates of 12% to 17% pa. The buyer pays for the hot water system through normal electricity billing payments.

You can buy the system on the spot — you don't even have to pay a deposit unless you want to. However, the less you have borrowed, the more quickly you'll pay off the debt. It may be cheap finance but, as always, don't borrow more than you have to. You should understand that



The EnergyCard makes a solar water heater more affordable.

the interest rate can change — it will be reviewed twice annually — so your repayments may vary.

Will I really save?

It sounds like a great idea, but will the cheaper finance really make up for the difference in purchase price of solar and electricity or gas systems? We'll do the sums for you:

■ A typical family off-peak electric hot water system will cost around \$900 (though you can find them cheaper). If you put the whole lot on your Bankcard you'd pay interest at a rate, say, of 14.5% pa. That makes a monthly payment of around \$45 to repay the loan in full, plus interest, over two years (assuming the interest rate doesn't change).

■ A typical family solar hot water system

will cost around \$1900. If you put the whole lot on your new EnergyCard you'd pay interest at the rate of 9% pa. Your monthly repayment would be around \$87 to repay the loan plus interest within two years (assuming the interest rate doesn't change).

So there's still a difference of more than \$40 per month.

However, once you add in the savings off your power bills — and a rough national average is an annual saving of 45% — you can see you'll soon be ahead with the EnergyCard. Hot water is usually the single largest power user for any household.

So there are savings at the time of purchase, and then every year.

The environment is better off too. The Department of Primary Industries and Energy estimates that, "On average, every time a solar water heater replaces an electrical one, two tonnes of carbon dioxide are saved from entering the atmosphere every year." □

IT IS BETTER TO GIVE AND RECEIVE

We're impressed with the approach taken by the program, but here we should point out the government is not as generous as might first appear with its EnergyCard.

It's widely believed there is no sales tax on solar hot water systems, but this is only partially correct. In fact sales tax has only been removed from the solar panels ('collectors') which gather the sun's energy. The government continues to reap sales tax revenue on other essential components of the system: the storage tank and the pipes and valves which connect the tank to the collectors. Sales tax (at the rate of 11%) accounts for around \$73 of the price of a \$1900 solar hot water system.

Solahart estimates there are 15,000 systems sold annually in Australia. That means \$1.1 million in sales tax goes to the government each year, ultimately paid by consumers. The government has allocated \$3.5 million to the EnergyCard program for the two years 1993-94 and 1994-95. And, from sales tax receipts, it should recoup \$2.2 million in the two years. Of course this sales tax would have been paid anyway by consumers buying a solar water system without the benefit of the EnergyCard scheme. The point we would like to make here is the paradox of offering a generous new incentive while maintaining a barrier (the tax) to buying the thing.

The EnergyCard program is designed to increase sales, so there should be even greater returns in tax for the government. Let's just say there's a 10% increase in sales caused by the promotion. That means an extra \$220,000 comes back to the government.

But there's more. Consumers who take advantage of the EnergyCard's credit will find they're paying interest at 9% pa on the sales tax component of the overall price. It's not a lot individually, but it could add up to \$50,000 per year if half the people who bought solar hot water systems borrowed the maximum amount on the Card. Paying interest on sales tax is a waste.

Putting it all together, the government's program is not as generous as it first appears. Over the initial two-year period,

\$2.2 million to \$2.4 million is recouped as sales tax and maybe another \$100,000 leaks away in wasted credit costs.

The government has not removed the sales tax on the storage tank and connectors because these components can also be used with electric hot water systems. Do they think consumers will try and cheat on their sales tax by buying a tank for their electric system but saying it's for a solar system? The obvious solution is to link the sales tax exemption to situations where the customer buys at least one solar collector panel at the same time as the tank. No-one is going to pay for the panel (around \$400) in order to avoid \$73 in sales tax.

The pressure rises

Let's put the program in its political context. In September last year, the federal minister for the environment, Senator John Faulkner, issued a strong warning about Australia's faltering progress towards lowering greenhouse gas emissions.

"We have to address how we are going to achieve our domestic and international emissions targets. We will not, with the current limited set of response measures in the first-phase National Greenhouse Response Strategy, meet those targets.

"The preliminary figures leave no doubt about this.

"Specifically, if we took no action, our emissions would grow from 572 million tonnes carbon dioxide equivalent in 1990 to 654 million tonnes in 2000."

But sales tax adds to the consumer burden of switching to solar hot water heating and therefore deserves attention. We've taken our concerns about the sales tax on components of solar hot water systems to Senator Collins, federal minister for primary industries and energy. He has responded that he will take the matter up with the federal treasurer.

Finally, we understand similar schemes may also appear alongside the EnergyCard, financed perhaps by energy utilities. Check out the alternatives with various retailers when you start looking for your solar system.

Right at home

Older people who can no longer manage on their own are increasingly receiving community care services in their own home rather than moving into a hostel or nursing home prematurely. Fine in theory, but although people now seem to have more care options than in the past, in practice they often aren't getting the aged care of their choice.



ABOUT 11% OF THE POPULATION is currently aged 65 or over and, according to a recent study by the Economic Planning Advisory Council, this will double to 22% by 2051. As our population ages, increasing numbers of elderly people will need support services. Although many older people are fit and well and quite capable of looking after themselves, the older we get, the more likely it is we'll need some sort of help.

In the past, older people no longer able to cope on their own might have considered it time to move into a nursing home. Today, the system has changed. The great majority of people receive help in their own homes rather than moving into residential care. Only 5% of Australians over 70 are now living in nursing homes and 4% in hostels.

Since the early 1980s government policy has moved funding away from institutions and into community services, partly because of cost concerns and partly in recognition that most people want to stay living in their familiar home environment if possible.

Today there is a variety of care choices available for older people having trouble looking after themselves, but it can be difficult finding out what your options are, let alone getting the care you want. In this article we look at some of the care choices available — and some of the problems you might encounter.

Staying put

With some outside help, many older people can stay in their own homes.

IT CAN BE VERY TRAUMATIC to uproot yourself from your home, your old neighbourhood and friends. If you've been thinking about moving because you're getting older, do consider the alternatives first.

Do you really need or want to leave home? Make a list of the things you can do yourself and those you need help with. If your main concern is security, having deadlocks and possibly an alarm installed is easier and cheaper than moving house. If you're worried about coping with the gardening or jobs around the home, you might be able to ask family and friends to help out. Perhaps you could afford to pay a handyperson. Some community health centres, councils and church or charitable organisations keep registers of people who will offer low-cost or even free help.

A number of government, voluntary and private agencies provide help with cleaning, home maintenance, shopping, laundry, personal care and so on. Some are free, while others charge according to your ability to pay. To find out about aged care services in your area, contact your GP, community health centre, local hospital, community and church groups or local council.

Councils often provide a wide range of services. They should also know about special accommodation in the area — for example, nursing homes catering for people from particular non-English-speaking backgrounds. Self-help and other specialist groups, such as the Alzheimer's Association, the Contingence Foundation of Australia and stroke recovery groups, can also provide information and support for people with particular problems and their carers.

HACC

The range of available community care services has expanded considerably since the introduction of the Home and Community Care (HACC) program in 1985. The aims of the program are to help frail older people and younger people with disabilities to live in the commu-

nity as independently as possible and also to assist their carers. Jointly funded by Commonwealth, state and territory governments, HACC services are available in all states and territories. The program is designed to fund and co-ordinate services run by state government departments, local government bodies and community, religious and charitable organisations.

Services available under the HACC scheme include:

■ **Home help:** Assistance with cleaning, cooking, washing, ironing, shopping and banking.

■ **Personal care:** Help with bathing and dressing.

■ **Home maintenance:** Such as changing light bulbs, fixing taps and door locks, gardening and certain home modifications.

■ **Food services:** For example, Meals on Wheels, neighbourhood food buying services and help with shopping.

■ **Transport:** Assistance with individual transport needs.

■ **Community nursing:** Supervision of medication, wound dressing and other nursing services provided by trained nurses at home or in a community centre.

■ **Paramedical services:** Such as physiotherapy and podiatry.

■ **Respite care:** Temporary care at home, in a day centre or hostel to give full-time carers a break.

The fact that there is no single point of contact for consumers trying to find out about the range of HACC services available is one of a number of problems with the HACC program. Another is that there is no integration of services. Each service will make its own assessment of your needs, so a lot of red tape is involved, which can be quite confusing.

The biggest problem, however, is that demand for services far exceeds supply. There is insufficient funding to maintain services, let alone increase them in line with growing needs.

The availability, type and cost of services vary considerably from area to area.

In particular, isolated rural areas are often unable to supply adequate services.

You may find a waiting list for services such as community nursing or Meals on Wheels, especially if you live in an area with a large elderly population. It can also be difficult to get respite care when you need it. Services are provided to those considered to be in greatest need first, which means people with simple requirements, such as help with shopping or transport, may miss out.

Lack of funding and insufficient staff to provide services also mean the hours of care allocated to individuals may be restricted. Assistance with showering and dressing, for example, may only be available on certain days of the week at particular times, which may be inconvenient or disruptive.

A recent parliamentary inquiry highlighted some of the program's problems and promised to reform and streamline the system in the near future. For example, the inquiry suggested single phone numbers should be advertised for HACC services within a region to assist people to locate and contact them; and regional community assessment agencies should be set up to avoid duplication of assessments. It also recommended that regional agencies provide better services for people with particular needs, such as those with dementia or from non-English-speaking backgrounds. Despite these problems, the HACC program has been acknowledged as successful and certainly a step in the right direction.

HACC services can be contacted through your doctor, council, community health centre, the white pages of the telephone book under Home and Community Care or the following state or territory HACC offices:

■ **ACT:** Community Programs, ACT Housing and Community Services Bureau, phone (06) 207 1062.

■ **NSW:** Ageing and Disability Services Directorate, Department of Community Services, phone: (02) 716 2547.

■ **NT:** Aged and Disability Services, Department of Health and Community Services, phone: (089) 89 2770.

■ **Queensland:** Home and Community Care Program, Queensland Health, phone: (07) 234 0337.

■ **SA:** HACC Support Unit, Department of Family and Community Services, phone: (08) 226 7027.

■ **Tasmania:** Aged Care Support, Department of Community and Health Services, phone: (002) 33 4731.

■Victoria: Community Care Development, Department of Health and Community Services, phone: (03) 616 8671.

■WA: North Metropolitan Health Authority, phone: (09) 382 0653.

You can also phone these numbers if you have a complaint about a HACCC service.

Care packages

Only recently introduced by the Commonwealth Government, Care Packages are designed for people with complex care needs who would prefer to remain in their own home rather than receive 'personal care services' in a hostel. In this case, a package of co-ordinated care services is provided in the home by one organisation (perhaps a nearby hostel). The client pays a weekly fee (regulated by the Commonwealth Government), depending on their income. The maximum fee that can be charged for a community aged care service package is 17.5% of the single aged pension (that is, \$28.14 a week). An ACAT assessment (see right) is necessary before you can receive a Care Package.

Another experimental program in South Australia is providing nursing home services in people's homes. So a wider range of choices of care should be available soon.

Moving out

If you leave your home, how do you find the care and accommodation that suits your needs?

IF YOU DECIDE TO MOVE OUT OF home, there are several options to consider. If, for example, you have a large house and want to sell it because housework, home maintenance and gardening have become too much of a worry, buying a home unit may be a good idea.

People who are able to get around independently but want companionship and support may like to consider accommodation in a group house. The Abbeyfield Society, a non-profit organisation, has established several group houses in the ACT, NSW, SA, Tasmania and Victoria, where up to 10 people share a house, with a housekeeper employed to clean, shop and cook meals. If you want to know if there is an Abbeyfield House in your area, contact the national office of The Abbeyfield Society, PO Box 1293, Collingwood 3006 (phone (03) 419 8222).

Village life

You may be attracted to the security, companionship and facilities offered by a retirement village. If you're wanting to move to a village because of your frailty, keep in mind that where recreational facilities, such as tennis courts, are provided, you'll be paying extra for them, even though you may never use them.

You may think of moving into a self-care unit in a village with tiered accommodation, in the belief that if you later need help, you can move into a serviced apartment or hostel and you'll eventually be able to get a place in the village nursing home. However, transferring from one tier to another is not straightforward. There is no guarantee that a vacancy in the village hostel or nursing home will be available when you need it, and there are usually considerable costs involved. If, for example, you want to move from a

KEEPING IN TOUCH

Irene knows her Aged Care Assessment Team (ACAT — see ACATs, above right) well by now and she appreciates their keeping in touch. It was her doctor who first referred her to them after seeing she had trouble doing things around the home because of worsening arthritis. A home visit by the team resulted in Irene receiving daily Meals on Wheels service to

save her the trouble of cooking, and weekly help with cleaning.

The team was called in again when Irene's husband Leonard became ill. This time they arranged for a home nurse to visit every day to help Leonard with showering, dressing and medications. Other residents in the block of units were happy to help out with shopping and banking.

Despite Irene's frailty, she was determined to stay at home and look after Leonard. She certainly appreciated the respite care he received in a nursing home for a couple of weeks which gave her a much needed break.

When it became obvious that Leonard needed round-the-clock care, ACAT staff approved his application for admission to a nursing home and provided the couple with a list of 15 homes in the area, so they could visit them and choose which ones they preferred. Within a few days a place became available in one of the homes on their shortlist. They were given only three hours to decide whether they would accept the bed.

Both Leonard and Irene are pleased they took up the offer. Leonard is getting the care he needs in a pleasant, friendly environment, while Irene, fiercely independent, is happy to stay in their old home. She's cancelled Home Care and nursing services and the only help she receives at present is from her neighbours, daily Meals on Wheels, and her son, who does her washing and other jobs around the home unit.

Irene's local ACAT still keeps in touch to see how she's going — she's talking to them in the photo.



Irene's Aged Care Assessment Team keep in regular touch.

self-care unit into a serviced apartment, you generally have to sell the unit before buying into a higher level of care. Be sure you get independent financial and legal advice before you sign up for a retirement village.

ACATs

If you want to move from home to a subsidised hostel or approved nursing home (those that receive financial assistance from the Commonwealth Government), you'll need to be reviewed by an Aged Care Assessment Team (ACAT) first.

Most people are referred to their local ACAT when they're being discharged from hospital or by their doctor, community nurse or social worker. Usually the team includes a doctor, nurse, occupational therapist and social worker. These teams assist older people who are having difficulty managing at home to arrange the most suitable care for their particular needs. That care might be provided in their own homes through the Home and Community Care program or in a hostel or nursing home.

Most ACATs are based in public hospitals, with other teams in community health centres and some located independently. Usually two members of the team will visit you at home to assess how you manage physically, mentally and socially.

A HELPING HAND

When 92-year-old Grace Nicholson had trouble getting about after being in hospital for a minor procedure, her son was keen for her to sell her unit and move to a retirement village. Grace had no desire to move from her home and her old neighbourhood, but she realised she couldn't manage alone. So her daughter contacted the local Aged Care Assessment Team (ACAT; see above for details).

Two members of the team visited Grace at home to see how she could manage. They advised her to have grab rails and a non-slip bath mat installed in the bathroom, and they arranged for daily Meals on Wheels as well as visits by a district nurse twice a week. The team also suggested Grace receive Home Care services through the Home and Community Care (HACC) program. For \$5 a week, she now has help with the housework and shopping.

Grace is content living alone at home. Her daughter, however, was concerned she might fall and be left lying alone, with no one to come to her aid. For peace of mind Grace has now purchased a personal pendant alarm, which will put her in touch with a monitoring centre at the press of a button in an emergency.

Although she is happy living on her own, Grace likes to socialise. She is no longer able to go out alone, so she looks forward to her weekly outing arranged by a local hospital day

Your local team can put you in touch with available services in your area. They can also arrange respite care to give frail older people or people with dementia and their carers a break. It may be provided at home, in a day centre or a short stay in a hostel or nursing home may be required. Respite care can also be organised by your GP or a social worker at your community health centre.

Whether or not you accept your ACAT's assessment and advice is up to you. No one can force you into a hostel or nursing home against your will. However, you can't move into a subsidised hostel or approved nursing home unless an ACAT decides you need that level of care. If the ACAT does not approve your application for admission, you will be sent a letter explaining how you, or someone acting on your behalf, can appeal against the decision. Usually disagreements can be sorted out before this stage through discussion with your assessment team.

The assessment system means fewer people are now being admitted to nursing homes before they need or want to leave their homes. However, the rigidity of the system does restrict freedom of choice. This lack of choice can be devastating for couples who have lived together for most of their lives and are suddenly forced to live apart at the end

of their days because only one has been classified as suitable for nursing home or hostel care (see *Till ACAT do us part*, overleaf).

Hostels

Hostels are designed to accommodate people who can no longer live on their own but don't need full-time nursing care. Hostel residents are generally able to get around independently and have control of their bladder and bowels, though many hostel residents need help with tasks like washing, dressing and eating.

Before moving to a subsidised hostel, you must be assessed by an ACAT and found to be needing hostel care. (An ACAT assessment is not required for admission to a non-subsidised hostel or 'serviced apartment'.) When your application has been approved, your local ACAT will give you information about hostels in your area, so you can investigate further which you would prefer. Depending on the area, there may be a waiting list for your preferred hostel, so it's a good idea to put your name on the waiting lists of several hostels you like.

If you decide to move into a hostel, make sure you get full and accurate information about all aspects of living there to be certain it suits your preferences and needs. Get independent financial and legal advice on the arrange-

centre. Every Wednesday she's picked up and taken to the centre for a day of activities, which may include a walk, a drive or a movie. "It's lovely to get out and be taken back to your home again at the end of the day," she says.



Grace enjoys her weekly day out, organised by a local hospital day centre.

ments before you move in or sign any contract.

You may be required to make a donation when you first enter the hostel. This 'entry contribution' currently averages around \$25,000, though the amount you actually pay (which is regulated by the Commonwealth Government) varies according to the hostel and your assets. All subsidised hostels are required to offer a portion of their accommodation to people with limited assets, who will pay either no entry contribution or a minimal sum. You may not get all the entry contribution back if you leave the hostel. The amount that must be refunded is regulated by the government and depends on the size of your contribution and the length of time you've lived there.

Most hostels provide single bedrooms with ensuite bathrooms. Residents pay a weekly fee which generally covers meals (served in a communal dining room), laundry, electricity and cleaning of the room. For those whose only income is the pension, this charge in

most cases will be no more than 85% of the pension plus rent assistance.

If you choose a non-subsidised hostel (often part of a retirement village complex), you may be charged extra for personal care and other services. Non-subsidised hostels are subject to little regulation and what the weekly fee covers depends entirely on the contract you've signed. You could be charged for every 15 minutes of service, so your expenses could mount up to such an extent that you might not be able to afford to continue living there.

Calculate carefully all the costs of entering and leaving the hostel, including the costs of leaving your current home, administrative fees, the entry contribution and ongoing fees. If you go on holiday or are admitted to hospital, you might still be charged hostel fees. You may also have to pay a deferred management fee if you decide to leave the hostel.

Compare these costs with those of other housing and care options, always bearing in mind your reasons for moving to a hostel. If you're thinking of moving

because you're worried about living on your own for health reasons, you might find you'd be better off financially to buy a personal alarm linked to a monitoring centre staffed by trained nurses. The VITALCALL MK VII, for example, which topped our recent alarms test (see CHOICE, April 1994), costs \$279, with a service charge of around \$30 a month on a long-term basis. An alarm system like this may also prove more reliable: hostels should have a 24-hour emergency call system but there is no requirement for the person on call to have any medical knowledge (though many do have a registered nurse available).

Pilot programs are also under way in several states where people currently living in hostels but in need of a higher level of care are being offered nursing home-type services within the hostel, thus avoiding an upsetting move.

Nursing homes

These days nursing home accommodation is restricted to people who require round-the-clock nursing or personal

TILL ACAT DO US PART

Aged Care Assessment Teams (ACATs) assist people to get the level of care they need, be that in their own home, in a hostel or a nursing home. But what ACAT decides is best for some people may not be the option they would choose for themselves. Under the new government assessment system, you can't move into a subsidised nursing home unless an ACAT gives its OK for you to do so. This seems quite inhumane in the case of couples who have spent most of their lives together and may now be forced to live apart.



Dorothy finally found a pleasant and caring hostel — but the system would have kept her and her husband John apart if she'd moved there before his death.

John and Dorothy, for example, found they couldn't cope with the trauma of separation after sharing more than 60 wonderful, active years together as husband and wife. "They were inseparable," says their only daughter Alice. "It was as if they were the one person."

When John became ill, Dorothy cared for him at home without any outside help for two years until he had to be admitted to hospital for a short time. During his hospital stay, the hospital social worker put the couple in touch with their local ACAT to help them work out how they could best be assisted when John was discharged.

Although John required sufficient nursing care to warrant admission to a nursing home, the assessment team realised the couple needed to remain living together at home in their familiar surroundings for as long as possible for their psychological and physical well-being. So they arranged for Home Care to help with cleaning for a couple of hours a fortnight and daily Meals on Wheels. Home nursing for an hour three times a week was also organised, but because the nurse was often only able to come to shower and dress John in the mid-afternoon, Dorothy and John eventually decided it was worth the extra expense to employ a private nurse for a couple of hours in the morning and an hour in the afternoon.

The team also advised Dorothy to apply for the Domiciliary Nursing Care Benefit, a fortnightly allowance to carers of people who have been assessed as requiring nursing home level care. Currently set at \$53.20 a fortnight, this meagre allowance certainly doesn't fully compensate for the costs of caring.

Within a year, Dorothy was in need of care herself after collapsing at home. As a result, both Dorothy and John were admitted to a private hospital. The assessment team said they both needed nursing home care, so Alice began her long,

care. If you think a nursing home may be appropriate for you or your relative, talk to your local doctor, who will in turn refer you to an ACAT (see page 17) for evaluation.

There are currently some 74,000 Australians living in over 1400 approved nursing homes run by private organisations, religious or charitable groups and government bodies. All nursing homes are registered with government health authorities and inspected regularly but standards of accommodation vary a great deal. Only 19% of residents have their own rooms, 43% are accommodated in two to three-bed wards, 32% have four or five people per room and 6% have six or more people living in one room.

Most nursing homes can't charge more than 87.5% of the single aged pension plus rent assistance (which together amount to \$169 a week at present). Some people may choose to pay more to live in one of the small number of 'exempt' nursing homes which have been approved to charge higher fees be-

cause they provide more luxuriant accommodation. They don't necessarily provide better care.

Nursing home places are allocated to those considered to be in greatest need first. You will generally have to wait for a bed to become available, and frequently there are several applicants waiting for the same nursing home, particularly if it's a good one.

Nursing homes receive no funding for empty beds, so if you're offered a bed you're often given no more than 24 hours to accept it. Of course, if you choose to move to a home and you're not happy there, you can move out, but a frail and timid elderly person might decide to suffer in silence rather than 'make waves' and demand a change of accommodation — and go through the process of applying for a place again. In addition, some nursing homes refuse to accept patients wishing to transfer from another home.

Plan ahead if possible. Visit several homes in or close to your neighbourhood, family and friends or have a reli-

able friend or family member do this for you. Have a look at the facilities and talk to staff and residents so you get a feeling for whether or not you'd like to live there.

Unfortunately, most people are admitted to nursing homes after a crisis and most do not get the care of their choice. It can be very difficult to find a suitable nursing home in your area. Some people have to wait for months for a nursing home and are eventually forced to accept a bed in a place far from family and friends and far removed from what they really wanted.

A review of nursing homes, commissioned by the Commonwealth Government and released in May 1994, examined some of the problems with current nursing home accommodation. According to the author of the report, Professor Bob Gregory, nursing home proprietors have no incentive to improve the quality of their accommodation because they all have a fixed income, both from residents and the government. Because the number of nursing homes is closely regulated, nearly all operate at or near full capacity, regardless of the state of their buildings.

Professor Gregory suggests two possible ways of achieving more investment in nursing homes and favours a combination of the two. The first option, which he calls a "public financing model", involves an increase in government spending on nursing homes, with some residents paying more for accommodation, depending on their income, and the level of government subsidy to the nursing home being reduced accordingly. The second option is a "market forces" approach which would deregulate nursing homes. This would mean your choice of nursing homes would be limited to what you could afford.

CHOICE doesn't support either option. We believe the present standard fee should be maintained. Everyone should have access to quality nursing home accommodation and care, regardless of their income, assets or ability to pay. A user-pays system is not appropriate for nursing homes — residents are vulnerable and need protection. Currently 65% are full pensioners and 25% part pensioners. They already have very little money left over once 87.5% of their pension plus rent assistance has been deducted; they shouldn't be penalised by having to pay more because the nursing home industry has failed to invest in upgrading homes.

time-consuming search for a suitable home. "Some of the nursing homes were terribly depressing," says Alice, "and some were impressive, but none of the ones we liked had vacancies."

Meanwhile, private hospital care was costing the couple hundreds of dollars a week, in addition to their top private hospital insurance cover. According to Alice, "Many other patients were in the same boat, terrified they were going to run out of money before they could get a place in a nursing home."

An ACAT approval for admission to a nursing home is valid for only 90 days, so when suitable nursing home vacancies did eventually occur, John and Dorothy had to be reassessed. By this stage Dorothy, though chronically unwell, had recovered sufficiently to be judged suitable for a hostel, but not for a nursing home. John, on the other hand, needed full-time nursing care, so he was assessed as being suitable for a nursing home, not a hostel.

"I felt they were being discriminated against for both being alive," says Alice. "They had 63 years together as a married couple. It was very distressing for them to contemplate being separated, especially when they knew my father was dying and they didn't have much time left together."

Alice is critical of the inflexibility of the assessment system, which gives no consideration to the needs of couples. However, she has only praise for the assessment team. Its members were always helpful and understanding, she says, and they supplied a list of retirement villages with a hostel and nursing home in the same complex, so the couple could be living at least near one another — though not in the same building, let alone the same room.

On visiting the homes listed, Alice found getting from the hostel to the nursing home often involved a long walk, with steps and garden paths to negotiate — quite an obstacle course for Dorothy, who was unsteady on her feet.

Eventually, realising that a move and separation would be too stressful, the couple decided they would stay on in the private hospital where they were sharing the same room.

John died last year and Dorothy's recovery has been such that she has been able to move to a private hostel with a pleasant, homely atmosphere and caring staff.

"I only wish they could have enjoyed these surroundings together," says Alice.

Residents' rights

Privacy, dignity, respect and managing your own money shouldn't disappear just because you move into a nursing home or hostel.

WHEN YOU MOVE INTO an approved nursing home or hostel, you should be provided with written information detailing financial arrangements and services. You should also be offered a formal agreement to sign which covers your rights, responsibilities and entitlements.

Subsidised hostels and approved nursing homes should provide services consistent with the Charter of Residents' Rights and Responsibilities. Among the rights listed in the charter are the right to personal privacy, the right to be treated with dignity and respect, the right to continue your cultural and religious practices, the right to complain and to take action to resolve disputes, the right to manage your own money and the right to be consulted on decisions about living arrangements.

A copy of the charter should be available in government-funded hostels and nursing homes. It can also be obtained from your local office of the Commonwealth Department of Human Services and Health.

The department also monitors the

standards of services provided by approved hostels and nursing homes. Its standards monitoring teams visit each hostel and nursing home about once every two years and prepare a report about standards in each. These reports are available to the public and can help you assess and choose a hostel or nursing home. Hostels and nursing homes should have copies of the reports, as should public libraries, or contact your local branch of the Commonwealth Department of Human Services and Health:

■ **ACT:** (06) 274 5111 or 1800 020 102 (1800 numbers are toll-free).

■ **NSW:** (02) 225 3555 or 1800 048 998.

■ **NT:** (089) 46 3444 or 1800 019 122.

■ **North Queensland:** (area codes 070, 077 and 079), 27 2225 or 1800 019 030.

■ **Queensland:** (07) 360 2555 or 1800 177 099.

■ **SA:** (08) 237 6111 or 1800 188 098.

■ **Tasmania:** (002) 21 1423 or 1800 005 119.

■ **Victoria:** (03) 285 8888 or 1800 133 374.

■ **WA:** (09) 426 3444 or 1800 198 008.

Complaints

If you're not happy about some aspect of your hostel or nursing home, first discuss the problem with the director of nursing or the management. If other residents have a similar complaint, it may be more effective to approach the person in charge as a group.

If you and your friends or relatives have no success negotiating with the management, you can contact a complaints officer in your state office of the Commonwealth Department of Human Services and Health. (You'll be connected to the appropriate person if you call your local number, listed left.)

In each state and territory there is also an independent advisory and advocacy service for older people who are residents of hostels or nursing homes. Staff in these services, aware of how vulnerable and powerless frail older people can feel, can help residents or their families talk to the supervisor and sort out problems with the management:

■ **ACT:** Disability, Aged and Carer Advisory Service, phone: (06) 295 0866.

■ **NSW:** The Accommodation Rights Service, phone: (02) 281 3600 or 1800 424 079.

■ **NT:** Darwin: Top End Advocacy Service, Phone: (089) 81 5883.

Alice Springs: Central Australian Advocacy Service, phone: (089) 52 7511.

■ **Queensland:** Older Persons' Advocacy Service, phone: (07) 260 6755.

■ **SA:** Aged Rights Advocacy Service, phone: (08) 232 5377 or 1800 802 030.

■ **Tasmania:** Aged Care Advocacy and Information Service, phone: (002) 24 2240 or 1800 005 131.

■ **Victoria:** Residential Care Rights Service, phone: (03) 602 3066.

■ **WA:** Older Persons' Rights Service, phone: (09) 220 0637.

Further information

Other advocacy services with information on a range of issues affecting older people include:

■ **Australian Pensioners' and Superannuants' Federation (AP&SF)**, phone (02) 281 4566 (national office). The AP&SF also has a video and resource kit on housing options for older people.

■ **Council On The Ageing (COTA)**, phone (03) 820 2655 (national office).

There are affiliated offices of the AP&SF and COTA in all states and territories.



A special secure unit for dementia patients in a nursing home; such specialised accommodation is often very hard to find.

CHOOSING A HOSTEL OR NURSING HOME

Whether you're moving into a hostel or nursing home, your new home should feel like home, not like a hospital. It should meet your needs for care and be a place where you feel comfortable, where your independence, dignity and individuality are respected. No one hostel or nursing home is likely to suit you perfectly; your choice will probably be a compromise. That's why it's important to think about what features are most important to you.

If, for example, you're choosing a place for a relative or friend with dementia, your main concerns might be to find

accommodation which is specifically designed for dementia patients, where there is ample security, so wanderers won't stray, without it feeling like a prison, and where staff are specially trained in managing dementia patients. Unfortunately, there is a shortage of such special accommodation.

Visit several nursing homes before adding your name to their waiting lists. Arrange to be shown around and talk to the person in charge, as well as staff and residents. There are many things to consider when choosing your new home. Take the following checklist with you when you visit a hostel or home.

Location

■ Is the home/hostel close to shops, public transport, family and friends? _____ Yes/No

The building

■ Are the building and grounds well looked after? _____ Yes/No

■ Are there ramps for wheelchairs? (You may not need a wheelchair now, but you might at some stage in the future.) _____ Yes/No

■ Is there a garden or area for sitting outside? _____ Yes/No

■ Is there a lift if there is more than one level? _____ Yes/No

■ Is the home clean, pleasant-smelling, bright and homely inside? _____ Yes/No

■ Is the atmosphere friendly and welcoming? _____ Yes/No

Rooms

■ How many communal rooms are there? How spacious are they? _____

■ Are there separate rooms for talking or reading as well as for watching television and dining? _____ Yes/No

■ Is there adequate space in residents' rooms? _____ Yes/No

■ Can you manoeuvre walking frames and wheelchairs easily in bedrooms, bathrooms and toilets? _____ Yes/No

■ Are bathrooms equipped with grab rails, shower seats, lever taps and non-slip floors? _____ Yes/No

■ Are residents encouraged to decorate their rooms by bringing in personal possessions such as photos, a favourite bedspread or small piece of furniture? _____ Yes/No

Staff

■ Are staff members pleasant and helpful? _____ Yes/No

■ Do they treat residents courteously, respectfully and as individuals? _____ Yes/No

■ Do they respect residents' privacy? _____ Yes/No

■ If necessary, are they trained in managing particular conditions, such as dementia or Parkinson's disease? _____ Yes/No

Lifestyle

■ Are residents encouraged to live as actively and independently as possible? _____ Yes/No

■ Are diversional therapy and physiotherapy programs available? _____ Yes/No

■ Does the home/hostel organise excursions or shopping trips? _____ Yes/No

If so, how frequently? _____

■ Are services such as a hairdresser, dentist, optometrist and podiatrist available? _____ Yes/No

■ How structured is the routine of the home/hostel? Can you get up, go to bed, or have a bath or shower when you want? _____ Yes/No

■ Can visitors call at most times? _____ Yes/No

■ Are pets allowed? _____ Yes/No

■ Is there a residents' committee so you can have some say in the way the home/hostel operates? _____ Yes/No

Food

■ What is the food like? Is it cooked on the premises? How much choice do you have? _____

■ Is there enough food? _____ Yes/No Ask to see menus for a week, and stay for a meal if possible.

■ Would your family be welcome to stay for a meal occasionally? _____ Yes/No

Costs

■ What are the financial arrangements? (Remember to get independent financial and legal advice before signing a contract.) _____

■ How much are the fees and what do they cover? _____

■ Are there extra charges for any services? _____ Yes/No

■ Will moving into a home/hostel affect your pension? (Seek advice from the Department of Social Security or the Department of Veterans' Affairs.) _____ Yes/No



CONSUMER-IN-LAW

Contingency fees — where you only pay your lawyer if you win the case — are becoming a reality in Australia. They will be good for people who can't afford to take a legitimate case to court, but there are worries we might end up with the mad litigation frenzy they have in the US.



The price of justice

THE LAW FAVOURS THE RICH, or so it seems. With the help of a good lawyer you can skip the country owing millions of dollars and live it up in a tropical playground, or sue the pants off someone at the drop of a hat. But if you can't afford to hire a lawyer you often can't get access to justice.

There are options available already to help with legal costs. You may be eligible for legal aid — where a lawyer is paid for by the government — although there are all sorts of criteria you must meet. Some states have legal aid funds which help cover your costs during the

trial; if you're awarded damages you then pay a fee out of that money back to the fund. (For more information, see *Legal aid* on page 24.) There are also many lawyers who will work for a speculative fee where they only charge for their time if you win the case (see below).

In May this year, a Commonwealth Government committee dropped a weighty 500-page action plan in the government's lap offering ways to improve access to justice for ordinary Australians. Working from the principle that all Australians should have equal access to the law, regardless of race, sex, where

they live or their ability to pay, the committee made a number of recommendations. Improving funding for legal aid is one, but it also suggests the introduction of contingency fees as another way of opening the door for people who otherwise can't afford to commence a legal action. This is shaping up as the likely option, with two states already allowing contingency fees and the others all considering them.

What are contingency fees?

In the simplest sense, contingency fees already exist where the lawyer doesn't charge a fee if you lose the case, although

"Many [legal] practitioners know of clients, with reasonable cases, who have been deterred from taking legal action because of the cost involved in doing so. Legal costs effectively are a barrier to justice."

ferred option from people proposing reform and are now allowed in SA and NSW. In SA a 100% uplift figure is allowed, which means the most a lawyer can charge is double what he or she normally would. This is based on the assumption that they lose as many cases as they win, so the lawyer should end up breaking even while the people who win their cases subsidise the losers. However, some people such as the Public Interest Advocacy Centre would prefer a more modest 25% uplift figure, as is the case in NSW.

Percentage fees are quite popular in the US in cases that don't involve criminal or family law. The concern over this type of fee is that it leads to claims for excessive damages, as has happened in some states of the US. However, Robert Cornall, executive director of the Law Institute of Victoria, says if the damages awarded are quite small, a 100% uplift fee could eat into a lot more of them than a percentage fee would. He says much of the fear of percentage fees is based on the US experience, but there are three main differences in Australia:

- The damages awarded in the US are far in excess of those awarded here.
- There is a more stringent liability rule here. In personal injuries cases in the US negligence doesn't always have to be proved for a guilty verdict.
- There is no rule on paying the other party's costs in the US.

The Queensland Law Society adds that the problems mentioned in the US are limited to a handful of states.

The opposite view is that if the damages are high, percentage fees will be far greater than uplift fees. Jim Campbell, executive officer of the Law Society of the NT, says if you're on a 10% fee working for a quadriplegic who gets damages of \$3 million, how can you justify taking \$300,000 from him or her?

Another argument used by opponents of contingency fees is the risk that a lawyer's judgment might be swayed by financial considerations. If they think the case is too difficult to win they might not put in as much effort as they would if they were assured of being paid. Simi-

larly, if they think the case is a sure winner they might encourage clients into a contingency fee arrangement just to double their fee when they win. This is a particularly ticklish problem that can be addressed by consumer protection measures (see next page) and which you can help to avoid by shopping around and getting a reasonable idea of your chances in the case.

Access to justice

The Queensland Law Society says, "Many practitioners know of clients, with reasonable cases, who have been deterred from taking legal action because of the cost involved in doing so. Legal costs effectively are a barrier to justice."

The costs aren't limited to the lawyer's fee when you take someone to court in Australia. There are **disbursements** which don't go into the lawyer's pocket, such as the cost of getting medical records, expert witnesses, etc. And if you lose the case you may be ordered to pay some or all of the other side's costs, which include their lawyer's fees and disbursements.

If a lawyer takes a case on a contingency fee basis, the only thing that is free if you lose is the actual fee for the lawyer's time. You will still probably have to pay the other side's costs and possibly your lawyer's disbursements. So a 'free' shot at litigation could still end up quite expensive. In fact, in NSW where scale fees (standard fees set by the Law Society) have been abolished, you have no control over what rate the other side agrees to pay their lawyer and a loss could be very expensive.

State by state

South Australia was the first state to introduce contingency fees. It allows lawyers to charge up to double the scale fee in the event of a win. It also includes a number of consumer protections (see next page).

NSW was next, although they are called 'conditional cost agreements'. They allow for a 25% uplift on a 'reasonable' fee. Since scale fees have been

you probably won't get away with paying nothing. Traditionally they've been prohibited in England, and therefore Australia, under the common law of champerty and maintenance. This makes it illegal for people who are supposed to be impartial in a legal action, namely lawyers, to have an interest in the outcome of the case. However, the High Court ruled back in 1960 that a simple version of contingency fees is legitimate — the lawyer charges his or her normal fee if the case is won and nothing if it's lost. These are called **speculative fees** and are reasonably common already.

Because there's very little in it for the lawyers in such an arrangement they would prefer other variations such as **uplift fees**, where the lawyer charges the normal fee for a win plus either an agreed flat amount or a percentage of the normal fee; or **percentage fees**, where the lawyer charges a percentage of the money awarded to the client in the event of a win.

Uplift contingency fees are the pre-

abolished in NSW, 'reasonable' is up to the lawyer and client to decide. This makes it more important than ever to shop around for deals.

The Law Societies in the ACT and Tasmania are looking at introducing similar contingency fee rules to those used in South Australia. The Queensland cabinet has approved contingency fees in principle but has yet to decide the form, although it seems likely it will be some sort of uplift fee. The Victorian attorney general is also considering introducing uplift contingency fees despite the preference of the Law Institute for percentage fees. Contingency fees are being discussed in the NT and WA but it seems unlikely they'll be introduced in the near future.

Consumer protection

The Law Society of SA has a number of consumer protection measures built into its rules on contingency fees. These include:

- Contingency fees can only be used in cases that don't involve criminal or family matters.
- The agreement must be in plain English in a form specified in the Law Society rules and must state exactly what the client will have to pay in the event of either a win or a loss.
- The client must be given a cooling-off

Contingency fees ... will increase access to justice for people who really need it, and if South Australia is any example there won't be an explosion in litigation.

period of five days after signing the document.

■ The lawyer must inform clients of their rights to get independent legal advice, to have the agreement reviewed by the Supreme Court and to have the charges reviewed by the Complaints Committee.

■ The lawyer can only enter into an arrangement if he or she believes there is a reasonable chance of failure as well as of success.

Thumbs up or down?

When all is said and done it seems the introduction of contingency fees is a good thing provided they come with sufficient consumer safeguards. They will increase access to justice for people who really need it, and if South Australia is any example there won't be an explosion in litigation.

If you believe you have a legal case against someone but don't think you can afford it, first go to some sort of community legal centre for free advice. You can find them under *Community Advisory Services* in the Yellow Pages (along with

all sorts of other community services). They can give you an idea of whether your case is worth pursuing, whether you'll be eligible for legal aid and what other options you have for financing your case.

If you choose to follow the case through and you're not eligible for any sort of assistance, shop around for a lawyer. Questions you should ask are:

- What rate is charged for the lawyer's time?
- How much are the disbursements likely to be?
- Are there any other costs that could arise?
- What will it cost you if you lose the case?
- How will the lawyer bill you (up front, regular intervals, at the end)?
- How long will the whole process take?
- What damages are you likely to get if it's a compensation claim?

This will allow you to decide whether the case is worth proceeding with, and by talking to a few different lawyers you can work out who is offering you the best deal. □

LEGAL AID

In a perfect world, everyone, no matter how poor, would be able to use the legal system if they had a legitimate case. The closest thing we have at the moment is **legal aid**, where, provided you pass the eligibility criteria, the government will pay a lawyer to take your case for you.

However, the Access to Justice Advisory Committee points out a number of deficiencies in the current legal aid system:

- Who and what is covered varies significantly from state to state; they might use a means test (to decide if you're really poor enough) or a merit test (to decide whether you've really been wronged); committal hearings may or may not be covered; and certain areas of law might be excluded altogether, such as neighbourhood disputes.
- Funding is unrelated to the demands on legal aid, so if demand increases the legal aid commissions have to introduce more restrictions on who or what is covered.
- There is very little co-ordination among the legal aid commissions in each state and widely different management practices, which leads to inefficient use of resources in some states.



The Committee recommended the formation of an Australian Legal Aid Commission to co-ordinate legal aid across the country by developing minimum eligibility standards, planning for changes in demand and co-ordinating education campaigns.

Another option currently available is **contingent legal aid funds**, which exist to some degree or other in the NT, Queensland, SA and WA. These are similar to contingency fees except the fund takes the risk rather than the lawyer and, as with legal aid, you have to pass eligibility criteria. If you lose the case you will still have to pay the other side's costs, but the fund will cover your disbursements and in SA and WA your

lawyer's fees. If you win, you pay back what was lent to you plus a fee to cover the costs for people who lose their cases. The funds are all relatively new and are still trying to find their feet, working out who should be funded and how much they should be charged if they win in order to make the fund self-sufficient.

To find out more about legal aid and funds, contact a local community legal centre.



Bodywise



'No frills' drugs offer cheaper choices

AT LAST CONSUMERS ARE ABLE TO have more say about the drugs they use and the price they pay for them.

The introduction of new legislation on December 1, 1994, means you should now be able to purchase cheaper brands of some 120 commonly used drugs.

In the past you've had to pay for the specific medication your doctor ordered, even if there was a cheaper version of the same drug available. Under the new legislation, however, you can ask your pharmacist to substitute cheaper brand if one is available — unless the doctor has specifically marked the prescription as being 'not for substitution'.

The drugs involved have been approved by the Therapeutic Goods Administration for 'bio-equivalence' — that is, they contain the same chemical ingredients, in the same strength and dose, have the same rate of absorption, work the same way, produce the same effect and they're just as safe as more expensive brands. The noticeable differences may be the packaging, colour or shape of the tablets.

The excipients — substances used to colour, bind, lubricate and add bulk to medications — may also be different.

Occasionally a doctor may need to prescribe a particular brand and mark the prescription as 'non-interchangeable' because a patient is allergic or reacts badly to an excipient. However, this is "extremely rare", according to Professor Richard Day, head of clinical pharmacology at the University of NSW and St Vincent's Hospital in Sydney. Consumers can be reassured that the cheaper brands are "just as good and just as safe" as more expensive brands, he told CHOICE. Hospitals generally use the cheaper brands, he added. Of course if you notice any strange reactions when you change drugs, tell your doctor immediately.

Professor Day endorses the move to give consumers more choice. Not so supportive are the Australian Pharmaceutical Manufacturers' Association and the Australian Medical Association (AMA), who believe patients may be confused if they receive different drugs from the ones they're used to and may refuse to take them. Part of the confusion may come from the fact that the industry calls these cheaper drugs 'generics', yet they still have brand names. They also have a truly 'generic' name which is the same

no matter what brand they are, plus an even longer chemical name. So, for example, a well known brand of sleeping tablet is Mogadon, a cheaper 'generic' brand of the same thing is Alodorm, the generic name for both of them is nitrazepam, and the chemical name is long and unpronounceable.

We believe confusion can be minimised if doctors explain the tablets are the same drug, although they look different. In some cases doctors may need to indicate their prescriptions are not to be substituted to avoid upsetting patients, but to suggest generic prescribing is confusing for all consumers is patronising.

Will doctors prescribe them?

Federal AMA president Dr Brendan Nelson told CHOICE there will now be an increase in consumer demand for cheaper drugs, but most doctors will continue prescribing well known brands because most patients prefer them. This seems unlikely to us if patients are informed they have a choice and that the drugs listed as interchangeable really are the same medications.

Dr Nelson also argued that large drug companies sponsor medical education seminars and research and deserve support. However, the 16 or 20-year patent a company receives if it develops a new drug should amply compensate for research money spent. All the drugs for which cheaper brands are now available are out of this patent time.

Many doctors are more familiar with the catchy trade names of drugs than with their longer and often not-so-easily-remembered generic names. Trade names are also prominent on drug bottles and packages, with the generic names written in small print and often obscured by pharmacists' labels. Maybe some doctor re-education is needed.

The new generic prescribing legislation follows an Australian Pensioners' and Superannuants' Federation (AP&SF) survey (conducted for the pharmaceutical benefits branch of the Commonwealth Department of Human Services and Health) showing many older people don't know how to gain access to cheaper drugs. They're either not aware they can ask their doctor to prescribe lower-priced brands or feel uneasy about

SOME EXAMPLES OF POSSIBLE SAVINGS

Dearer brand	'Generic' brand	Generic name of drug	What it's used for	Maximum price difference (\$)
Inderal	Deralin	Propranolol HCl	High blood pressure	2.00
Mogadon	Alodorm	Nitrazepam	Insomnia	1.00 (25 tablets)
Naprosyn	Inza	Naproxen	Arthritis	2.18
Nordette 28	Monofeme 28	Levonorgestrel with ethinyl oestradiol	Contraception	4.88
Proctosedyl	Proctocort	Hydrocortisone-cinchocaine HCl	Haemorrhoids	11.26
Valium	Antenex	Diazepam	Anxiety	1.00

questioning a doctor's recommendation, said Norah McGuire, AP&SF's national secretary. The same can be said of many consumers of all ages.

The survey of more than 100 older people living in Sydney and Adelaide indicated many older consumers are likely to stay with their doctor's choice of medication, regardless of considerable cost savings, unless they are given reliable information about alternative brands.

Doctors "too busy" to talk

People involved in the study commonly reported they had to continually ask their doctors about their treatment because doctors did not volunteer important information. They saw doctors as too busy and sometimes too quick to write a prescription without informing the patient about possible drug side effects.

Many older people assumed more

expensive products were better and cheaper drugs inferior, and said their doctors didn't discuss drug costs with them.

This assumption is false, but according to Ms McGuire, "There are 30 million prescriptions written each year for premium brands for which there are cheaper and equally effective alternatives." She believes pensioners and low income earners who hold a concession card are paying \$32 million too much each year for prescription medications.

In 1990 the government introduced a minimum pricing policy, designed to

encourage greater price competition within the pharmaceutical industry and nurture the development of a viable generic drug manufacturing industry. Under this arrangement, all prescriptions on the Pharmaceutical Benefits Schedule (PBS) are subsidised up to the price of the cheapest brand.

Pensioners and concession cardholders pay no more than \$2.60 for any prescribed PBS medication — unless their doctor orders a more expensive drug for which there is a generic equivalent. In this case, they have to pay \$2.60 plus the difference between the price of the expen-

MANAGING YOUR MEDICATIONS

Medications can play an important role in the treatment of health problems, but to use them effectively you need to be aware of what you're taking and why as well as any potential dangers associated with taking them.

Under recent Commonwealth Government legislation, written consumer product information (CPI) should be provided whenever a new drug or a variation to an existing one is dispensed. The CPI should include the generic and brand names of the drug, details about what it is used for, how often it should be taken, how it should be stored, common side effects, and so on. By 2002, whenever you're dispensed any prescribed drug, you should also receive written CPI.

CPIs can help consumers use medications wisely. But it's even more important to have good communication with your doctor before any drugs are prescribed. To make an accurate diagnosis and prescribe medications appropriately, doctors need basic information from you, including your symptoms, the medications you're taking (not forgetting over-the-counter products such as aspirin and 'natural' therapies) and any allergies you have. And you need to keep yourself informed by asking questions. Doctors are not always forthcoming with information, so you do have to ask questions to understand your treatment.

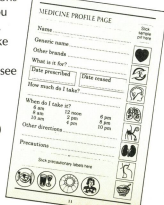
Ask your doctor:

- Is medication necessary to treat the condition? (For example, if you've got a cold or the flu, antibiotics won't help — unless you've got a secondary bacterial infection too — because colds and flu are caused by viruses.)
- If you need a medicine, what is its name?
- What is it for; what does it do?
- How long will it take to work and how can you tell if it's working?
- What should you do if it doesn't work?

- When and how should you take it?
 - How should it be stored?
 - What should you do if you miss a dose?
 - What are the possible side effects and what should you do about them?
 - Is it likely to interact with other medicines you're taking (including over-the-counter products like aspirin)?
 - Are there things you should avoid while taking the medication (such as driving, sun, alcohol or particular foods)?
 - When should the medication be reviewed or discontinued?
 - Is there any written information about the medication you can have?
- Ask your pharmacist:**
- To explain the label.
 - To write what the medication is for on the label (for example, blood pressure tablets).
 - Whether it interacts with other drugs you're taking.
 - How it should be stored.
- And now you can ask your pharmacist, as well as your doctor:**
- Is there a cheaper generic equivalent appropriate for me?

Keep a record of the medications you're taking. Include the date you started taking it, the date finished, the dosage and how often you take it. A personal medicines diary is available for \$1 from the AP&SF (see the main article for the address).

Check the expiry dates on all your medications. (Keep them in their original labelled containers.) Old medications can be harmful as well as ineffective.



The 15th CHOICE Subscriber Draw For new subscriptions and renewals received

**January 1 to
March 31, 1995**



sive drug and that of the subsidised generic alternative. That can add from 20 cents to \$11.26 to the price of each prescription. Over a year, this difference can make quite a hole in your pocket.

For example, if you're a pensioner or concession cardholder and you're prescribed the haemorrhoid ointment Proctosedyl you'll be paying up to \$13.85 for each prescription. If, however, you're prescribed Proctocort, the generic version, you'll pay only \$2.60. Non-pensioners may pay as much as \$24 for the expensive brand, while the generic ointment will cost around \$11.

Generic prescribing can mean big cost savings if you regularly take a number of medications. If you're a concession cardholder and have paid for more than 52 prescriptions in one year, you'll receive subsequent medications for the year free of charge instead of having to pay \$2.60 for each drug. If you're prescribed a non-generic, however, you'll have to continue paying the difference between the expensive brand and the generic brand even when you've filled more than 52 prescriptions.

The AP&SF has produced a free guide to medication costs which lists the most common \$2.60 medications, their more expensive equivalents and the cost savings possible. To obtain a copy, send a stamped, self-addressed envelope to the Australian Pensioners' and Superannuants' Federation, Locked Bag 2111, North Sydney 2059.

For more information on the new arrangement, call the free government health information line on 1800 020 613.

What can you do?

Before getting your prescription filled, ask your GP or pharmacist if a generic equivalent is available. If so, ask him/her to prescribe it for you. If your GP indicates the prescription is 'not for substitution', ask why he/she believes it is unsuitable for you.

If you're a pensioner or concession cardholder and you're charged more than \$2.60 for a medication you will know you've been prescribed an expensive brand. If you notice this, you can ask your pharmacist or doctor if there is a cheaper product. □

Subscriber draws are now held quarterly and on April 3, 1995, we'll be holding our fifteenth. The lucky winner will be able to choose any two products from the following tests, published July 1994 to September 1994.

- ☐ Vacuum cleaners (July)
- ☐ Chainsaws (July)
- ☐ Strollers (August)
- ☐ Mobile phones (August)
- ☐ Washing machines (September)

These are products we bought for testing, so you won't be the first to turn them on or set them up. But we'll cover any service problems with a CHOICE warranty that'll match the manufacturers' — just as if you'd bought them new.

All new CHOICE subscriptions and renewals received from members and personal subscribers (including donors of gift subscriptions) by March 31 will go into the draw, unless of course you indicate you don't want to be included.

(If you're not due to renew your subscription during the period, don't worry, we'll be holding other draws during the year — your renewal notice will have the details. And if you're on a two-year subscription you'll be entered on your first anniversary as well as when you renew again.)

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- Information on how to enter and prizes forms part of these conditions of entry.
- Employees, and their immediate families, of the Australian Consumers' Association and its associated companies and agencies are ineligible to enter.
- Entrants must be residents of Australia.
- Applications are subject to a verification check and the judge's decision is final. No correspondence will be entered into.
- The prizes will be delivered free anywhere within Australia.
- Prizes cannot be taken as cash.
- South Australian residents may enter the draw by completing the form and posting to: Reply Paid No. 24, ACA, 57 Carrington Road, Marrickville 2204, without subscribing to the magazine. Only one entry per person is permissible through this method.
- Last date for receipt of entries to the draw is March 31, 1995. No responsibility accepted for lost, late or misdirected mail.
- The draw will be conducted at the office of the Consumers' Association at 10 am on April 3, 1995.
- The winner will be notified by letter and published in the earliest feasible issue of CHOICE after that.
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'AVE A 'DEET' WEEKEND?

Some insect repellents simply don't work. Others contain such high concentrations of chemical that they could be poisoning you along with the mosquitoes. Which mozzie buster should you buy?

THERE'S NOTHING MORE irritating than a swollen, itchy mosquito bite! And the bite may not be the only thing that blood-hungry mozzie leaves behind when it's finished feeding on your ankle. Mosquitoes carry diseases including Ross River fever, malaria, dengue fever and yellow fever. Perhaps this explains why Australians spend millions of dollars on mosquito repellents each year.

But what exactly are you putting all over yourself and your family each time you use an insect repellent? Are these products really safe to use or are there better 'natural' alternatives? And how much will you have to pay to protect yourself and the kids from the dreaded mozzie this summer?

AVOIDING MOSQUITO ATTACK

The discomfort caused by mosquito bites, and the fact they're disease carriers, are two good reasons to take steps to prevent them from invading your life. You will be concerned about keeping mosquitoes at bay all year round if you live in Queensland, the Northern Territory or northern areas of NSW and WA. If you live in the southern states you only really need to worry about mosquitoes during the summer months.

Start by making your home mosquito-proof. Make sure all opening doors and windows have adequate screens on them. If you have a chimney, it may need netting or some sort of shutter over the top in spring and summer. Avoid having sources of standing water around your house where mosquitoes might breed. Some plants — mint, tansy, pennyroyal, fennel, wild marjoram and basil — are said to be natural insect repellents, so it may be worth growing them in pots near doors or on window ledges. Keeping a saucepan of chopped garlic or onion by the window is also supposed to deter flies and mosquitoes.

The next step is to make yourself mosquito-proof. This is particularly important if you're camping or planning to spend a great deal of time outdoors. Wearing protective clothing, including long trousers

Even in Australia mosquitoes carry diseases, so it's worth protecting yourself — but don't go overboard with the amounts you use. Follow the instructions.



and long-sleeved shirts, is one way to prevent bites — if you can stand the heat — but using a personal insect repellent may be the most convenient form of protection against mozzie bites.

There are now over 30 different personal insect repellents on the market to choose from and they come in several forms: aerosols or pump sprays, roll-ons, lotions, gels and creams.

In many cases manufacturers are using combinations of active ingredients in their products from quite an extensive list of chemicals rather than just one active ingredient. There's also been an increase in the number of products on the market claiming to be 'natural'. Such an array of products can make finding the right repellent a confusing exercise.

We've taken the hard work and confusion out of choosing by testing the efficacy of 25 products from 14 different manufacturers and assessing their value for money. The table on page 32 shows the average length of protection offered by the different products, the ingredients they contain and their price per application.

HOW THEY WORK

The active ingredients in a personal insect repellent evaporate into the air, producing a chemical barrier around the

areas on the body that the product covers. All exposed skin should be covered for the repellent to be as effective as possible.

WHAT'S IN THEM?

The problem with covering all exposed skin with these substances is that some contain high concentrations of chemicals with known health risks. For example, N,N-diethyl-m-toluamide (DEET, see below) is recognised as being one of the most effective mosquito repellents, but it's known to be the cause of sometimes extreme reactions, particularly in children.

The main active ingredients identified on the labels of the insect repellents we tested were those listed below. What exactly are these ingredients and how safe are they?

■ **Citronella:** This was used in all the 'natural' formulations in this test. It is used as both repellent and insecticide and also has antiseptic qualities. It has a strong, aromatic, lemony smell. Its active ingredient — citronellal — belongs to a group of chemicals known to include skin irritants.

■ **N,N-diethyl-m-toluamide (DEET):** This is found in many products as a mosquito

repellent although it is also said to be effective against biting midges, sandflies, leeches, fleas, march flies and ticks. DEET has been recorded as the cause of reactions ranging from dermatitis (skin reactions) to encephalitis (inflammation of the brain tissue). The chemical can be absorbed through your skin and, because it's fat-soluble, it can accumulate in the brain.

There have been several reports of severe toxic reactions caused by DEET. For example, an eight-year-old girl was admitted to hospital suffering from seizures and behaviour change (irritability, agitation, restlessness) following four days when copious quantities of an insect repellent which was 15% DEET had been applied.

The child was suffering from toxic encephalopathy (disease of the brain). Following a couple of days' treatment she recovered and was able to leave hospital. Similar symptoms were recorded with a five-year-old girl in 1979, where a 10% DEET spray had been used for three months. In that case, the parents had been careful to follow the instructions on the container. The child died and encephalopathy was diagnosed.

Complications arising from the use of insect repellents because of DEET seem rare when you think about how many millions of people use repellents containing this chemical worldwide. The reported cases of children suffering from toxic encephalopathy are usually due to excessive use of repellent containing DEET. Deaths have also been reported from swallowing of insect repellents containing this chemical.

An article which appeared in *The Lancet* (the journal of the British Medi-

cal Association) in 1988 concluded: "When used sensibly insect repellents are advantageous and safe, but the potential toxicity of DEET is high and the use of repellents containing more than 50% DEET should be avoided in infants and young children because of their thinner skin and greater surface area to mass ratio [they have proportionally more skin area compared with their weight than adults so their bodies absorb relatively more of the chemical, which they are less able to deal with]. Frequent total body applications of DEET for days or weeks should be avoided." The article also suggested that serious consideration be given to withdrawing all high-strength (more than 75% DEET) preparations from general use.

Two products in our test, the BUSHMAN gel formulations, were 80% DEET — that's too much. The manufacturer claims these formulations are "adult-strength" and just one application is sufficient to last for hours. However, other products with lower concentrations of DEET still managed to offer a long period of protection against mosquitoes.

Another point to be wary of is that DEET causes certain kinds of plastic and some artificial fibres to dissolve — for example, on watches, spectacles, car seat covers, compasses and handbags — so take care to avoid contact with these materials.

■ **Di-n-propyl isocinchomeronate (DPI):** This chemical is used as a fly repellent and isn't very toxic. It may cause stinging, particularly in young children.

■ **Eucalyptus oil:** It contains cineol — a volatile oil which can cause damage to

the nervous system if absorbed through the skin in large doses. If swallowed, a dose of 3 mL or more can cause severe poisoning in adults. A much smaller dose can be dangerous if swallowed by children. Insect repellents which are more than 25% eucalyptus oil must have a poison label, but all formulations in this test used less than 25%. BUG OFF snuck in just under the 25% limit — it didn't need a label because it's 23% eucalyptus oil. Take care when using a product with eucalyptus oil on children to ensure they don't swallow it and don't have access to the container as there have been cases of severe poisoning in children.

■ **Melaleuca oil:** This is another name for tea tree oil, which is generally recognised for its germicidal and healing/antiseptic properties. Its active ingredients are not thought to be toxic if given in proper doses but prolonged use has been known to cause liver deterioration. Lemon-scented tea tree oil is also used in some repellents.

■ **N-octyl bicycloheptene dicarboximide (OBD):** This chemical is used in conjunction with pyrethrum (see below) to block the insect's ability to break down pyrethrum insecticides. No adverse effects on humans have been identified.

■ **Pyrethrum/pyrethrins:** This is a natural insecticide extracted from a type of chrysanthemum flower. Pyrethrins are used in household insecticides and are incorporated into insect repellents because they have a 'knock-down' effect on mosquitoes which land on the skin.

■ **Permethrin:** This chemical is also an insecticide rather than a repellent and was used in the BUSHMAN pump spray formulation. It's a synthetic pyrethroid which is based on the structure of pyrethrins but is more stable and persistent. Synthetic pyrethroids are generally recognised as not being very toxic to humans as the chemicals are readily broken down by the body. However, they are nerve poisons, so they may have a toxic effect if they're absorbed or swallowed in sufficient doses.

■ **Piperonyl butoxide:** This is another chemical used in conjunction with pyrethrins and pyrethroids to enhance their effectiveness and reduce the quantity of the insecticide which is needed in the formulation. It's considered to have low toxicity but has been known to cause a variety of gastro-intestinal effects as well as central nervous system depression. It was only used in the SAVINGS repellent.

HOW TO USE INSECT REPELLENTS

- Read the instructions on the entire can or package carefully.
- Test the repellent on a small area of skin first to ensure no adverse reaction occurs.
- Apply the repellent to exposed skin only and/or clothing, as directed on the product label. (Note that repellents containing DEET may damage some plastics and synthetic fibres; see above.)
- Never use repellents on cuts, wounds, or irritated skin. Don't apply to the groin area.
- Don't apply to the eyes, lips or mouth or to the hands of younger children. To apply to your face, spray a small amount on your hand and spread it carefully.
- Apply sparingly — use just enough repellent to cover exposed skin or clothing. Saturation or frequent reapplication is not necessary and won't make it work any better.
- Wash treated skin with soap and water after returning indoors. This is particularly important if you use repellents day after day.
- Wash treated skin and seek medical advice if you suspect someone has reacted to an insect repellent.
- Always use a repellent with minimal DEET for children.
- Empty insect repellent containers should be wrapped in paper and disposed of in the garbage.

■ **Triclosan:** This is used in the RID formulations to kill bacteria — introduced by the insect bite or by scratching the area around the bite — which might cause infections. It is commonly used as a disinfectant in surgical scrubs, soaps and deodorants. There have been isolated reports of it causing contact dermatitis, so test a small area of skin first to check whether you're sensitive to it.

HOW LONG DO THEY LAST?

How long can you expect an insect repellent to last in different situations such as doing exercise or simply doing nothing? Most products don't make specific claims about how often you'll have to reapply the repellent under different conditions. They usually make general statements like "repels for hours". SANDY'S NATURAL pump spray suggests you reapply the product after swimming. The AEROGARD aerosol says you might need to reapply after excessive perspiration.

The length of time a repellent is effective will be determined not only by the amount of repellent in the formula but also by the amount you sweat, humidity in the air and how hungry the insects are. In particular you should reapply them after vigorous exercise or swimming, which will tend to wash them off. Our tests were performed on live volunteers who remained inactive throughout, so the results — in the table — are around the best you could expect for the products.

NATURE'S OWN

Only one product claiming to be 'natural', the WALKABOUT gel, was a reasonable repellent, lasting up to two hours. The six other natural products were pretty poor, giving 1.5 hours' or less effective protection. Three of them gave less than an hour's protection — you would have to reapply them often, which could work out to be annoying and expensive.

During four out of the six tests of both the ENVIRON pump spray and the roll-on, the volunteer was bitten by mosquitoes immediately after the product was applied to their arm. This was also the case in three out of the six tests of the WALKABOUT roll-on. These were the three poorest performers in the test and can't be recommended as effective mosquito repellents. You definitely shouldn't consider using them if travelling to areas where the risk of disease from mosquitoes is significant.

In addition to being poor performers, products claiming to be 'natural' or containing 'natural' plant oils aren't necessarily non-toxic. Exercise the same care



when using these products as when you use repellents with synthetically derived chemicals.

VALUE FOR MONEY

The two products with the highest DEET concentration — the BUSHMAN gel and gel with sunscreen — were still repelling mosquitoes long after six hours. However, 80% DEET is excessive — unless perhaps you're planning to camp out in the jungles of Papua New Guinea. Sixteen other products gave an average of between 3.5 and 6 hours' effective protection and they had much lower concentrations of DEET. For instance, the SAVINGS aerosol is only 3% DEET but still averaged four hours' protection.

All the aerosol products performed well in this test (this may be because they all contain DEET) but good and poor performers were found in all other application types — pump spray, roll-on, gel and cream. However, because the only good gel performers were the high-DEET BUSHMAN products we haven't included them in our Best Buys. They're also relatively expensive.

Three AEROGARD repellents (both aerosols and the roll-on) gave 5.5 to 6 hours of protection — making them next-best performers after the BUSHMAN gel products — and contain a reasonable amount of DEET. They cost around 10 cents per application (we called covering two forearms with the repellent an application).

The cost per application of the repellents tested ranged from 30 cents for the WALKABOUT roll-on down to five cents for several products. Best performers combined with value for money were AEROGARD lotion and RID lotion, both giving an average of five hours of protection for five cents. The poorest value for money was provided by the WALKABOUT roll-on at an average of half an hour's protection for 30 cents.

BEST BUYS

Aerosol	Cost per application
AEROGARD Low-irritant	10 cents
AEROGARD	10 cents
Lotion	
RID	5 cents
AEROGARD	5 cents
Pump spray	
OFF!SKINTASTIC	5 cents
Roll-on	
AEROGARD	10 cents
NO FRILLS	10 cents
Gel	
None	

Choose insect repellents with a formulation of less than 50% weight-for-weight, or weight-per-volume DEET. For children in particular, choose the repellent with the lowest possible DEET concentration — some experts suggest no more than 7.5%. Apply as little as possible, using clothing as protection instead. You can also apply the repellent to the child's clothing instead of their skin.

If you want to use a totally DEET-free product the WALKABOUT gel gave reasonable protection and is the best choice of all the 'natural' products. At five cents per application it was also good value for money.

If you want to repel a range of insects including bush flies, look for formulations which incorporate di-n-propyl isocinchomeronate (DPI).

Mosquito repellents

1

Product
(in order of average
working time)

Product	Type tested	Size	Manufacturer/distributor	Repellent
BUSHMAN	Gel	75 g	North Queensland Laboratories	80% DEET w/w
BUSHMAN	Gel with sunscreen	75 g	North Queensland Laboratories	80% DEET w/w
AEROGARD Low-irritant	Aerosol	150 g	Samuel Taylor	19% DEET, 4.35% DPI, 1% OBD w/w
AEROGARD	Aerosol	100 g	Samuel Taylor	19% DEET, 4.35% DPI, 1% OBD w/w
AEROGARD	Roll-on	50 mL	Samuel Taylor	11.47% DEET, 4.18% DPI, 2.77% OBD w/v
RID	Aerosol	100 g	Thorley Laboratories	10% DEET, 2% DPI, 1.5% OBD, 0.1% triclosan w/w
RID	Lotion	125 mL	Thorley Laboratories	16% DEET, 2% OBD, 1% DPI, 0.1% triclosan w/v
NO FRILLS	Roll-on	50 mL	Franklins	11.47% DEET, 4.18% DPI, 2.77% OBD w/v
KOKODA	Lotion	125 mL	Furious	15% DEET, 3% DPI, 2% OBD w/w
AEROGARD	Lotion	125 mL	Samuel Taylor	17% DEET, 4.95% DPI, 1.8% OBD w/v
BITEFREE	Aerosol	150 g	Pea-Beu Manufacturing Co	5.22% DEET, 1.1% OBD, 1.1% DPI w/w
BUSHMAN	Pump spray	500 mL	North Queensland Laboratories	33% DEET, 1.1% DPI, 1.1% OBD w/w
RID	Roll-on	60 mL	Thorley Laboratories	16% DEET, 2% OBD, 1% DPI, 0.1% triclosan w/v
BUSHMAN	Aerosol with sunscreen	150 g	North Queensland Laboratories	20% DEET, 1.1% OBD, 1.1% DPI w/w
SAVINGS	Aerosol	175 g	GJ Coles	3% DEET, 2.5% DPI, 2% OBD w/w
OFF!SKINTASTIC	Pump spray	125 mL	SC Johnson and Son	6.975% DEET w/v
OFF!SKINTASTIC	Lotion	125 mL	SC Johnson and Son	7.35% DEET w/v
BI-LO	Roll-on	50 mL	Trend Laboratories	7% DEET, 2% OBD, 1% DPI, w/w
WALKABOUT	Gel	125 mL	Thursday Plantation	1.89% melaleuca, 0.945% lemon-scented tea tree oil, 2.835% citronella
BUG OFF	Pump spray	50 mL	Natural Oil Workers	23% eucalyptus, 23% citronella w/v
SANDY'S NATURAL	Pump spray	100 mL	Sandy's Natural Herbal Products	4% citronella, eucalyptus, rosemary w/v
BEE NATURAL	Lotion	125 mL	M and C McDermid	Citronella, melaleuca oil (A)
ENVIRON	Roll-on	50 mL	Shop Direct	3% citronella, 2% melaleuca oil w/v
ENVIRON	Pump spray	100 mL	Shop Direct	3% citronella, 2% melaleuca w/v
WALKABOUT	Roll-on	50 mL	Thursday Plantation	Melaleuca, lemon-scented tea tree oil, citronella (A)

* Prices supplied by manufacturers/distributors in November 1994, unless noted otherwise.

** An application here equals covering two forearms.

(A) % not available.

(B) Average price when three samples were purchased.

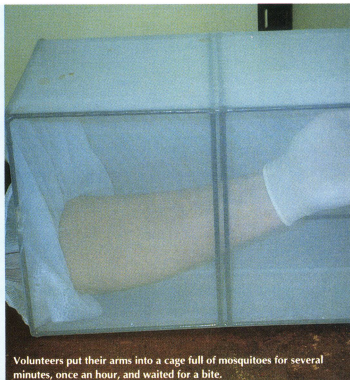
HOW WE TESTED

Each formulation was evaluated twice by each of three volunteers (two men and one woman). A specified amount of the product was applied to the forearms of each volunteer. Gels and lotions were applied and spread evenly with a piece of aluminium foil to ensure even distribution of the formula on the arm. Aerosols, roll-ons and pump sprays were applied directly to the forearm.

Assessments were made immediately after application of the insect repellent and then at hourly intervals until a confirmed bite was recorded. On each occasion the treated arms were introduced into a cage of approximately 500 mosquitoes for three minutes or until a confirmed bite was received. A confirmed bite was defined as more than one bite in the same exposure period or one bite in each of two consecutive periods.

The dengue mosquito was used as the test species due to its ability to be bred in laboratories and its reliable biting behaviour. It is used throughout the world as one of the standard test insects for evaluating repellents.

For the purposes of our tests, the temperature and humidity remained constant throughout and the volunteers remained inactive between the times the repellent was applied and such time that a confirmed bite was received.



Volunteers put their arms into a cage full of mosquitoes for several minutes, once an hour, and waited for a bite.

Insecticide	Average working time (hours)	Average price (\$)*	Price per application (cents)**	Product (in order of average working time)
	> 6	9.95	20	BUSHMAN
	> 6	10.95	20	BUSHMAN
	6	4.00	10	AEROGARD Low-irritant
	5.5	3.30	10	AEROGARD
	5.5	3.10	10	AEROGARD
pyrethrum w/w	5	4.40	15	RID
	5	4.40	5	RID
	5	1.80	10	NO FRILLS
	5	6.50	10	KOKODA
	5	4.00	5	AEROGARD
	4.5	3.05	5	BITEFREE
permethrin w/w	4.5	29.95	10	BUSHMAN
	4.5	3.75	10	RID
	4	9.95	20	BUSHMAN
pyrethrins and 0.4% piperonyl butoxide w/w	4	3.00	5	SAVINGS
	3.5	4.00	5	OFFISKINTASTIC
	3.5	4.00	5	OFFISKINTASTIC
	3.5	1.70	5	BI-LO
nelia	2	6.00	5	WALKABOUT
pyrethrins w/v, citronella	1.5	7.20 (B)	10	BUG OFF
pyrethrins w/v, citronella	1	6.05 (B)	10	SANDY'S NATURAL
nelia	1	6.00 (B)	10	BEE NATURAL
pyrethrins w/v, citronella	0.5	2.75	10	ENVIRON
pyrethrins w/v, citronella	0.5	3.85	5	ENVIRON
nelia	0.5	6.00	30	WALKABOUT

1 Repellent/insecticide
The active ingredients we found in the repellents are discussed in detail on pages 29-30. As well as repellents they include insecticides (for a 'knock-down' effect) and other chemicals that make the repellents and insecticides more effective. Percentages are expressed as either weight-for-weight (w/w) or weight-per-volume (w/v).

2 Average working time
Assessments were made immediately after each repellent was applied to the forearms of our volunteers and then at hourly intervals until a confirmed bite was recorded. The BUSHMAN products were still working effectively past six hours.

SPOT THAT BUG

There are several types of mosquito found in Australia. The following are three of the most common.

■ The common banded or freshwater mosquito (*Culex annulirostris*) is prevalent in Australia and can pose a significant health risk. It is also found widely in Papua New Guinea, the South Pacific, Indonesia and the Philippines. Breeding places include freshwater swamps, pools and streams. It may breed in plague numbers in low-lying grassy areas where water lies for two or three weeks after heavy rain. The diseases it carries include periodic filariasis, Murray Valley encephalitis, Ross River fever and canine heartworm. It is responsible for about 80% of the cases of mosquito-borne diseases occurring in Australia.

■ The dengue mosquito (*Aedes aegypti*) is able to transmit diseases such as dengue fever and yellow fever and is a potential carrier of dog heartworm. It is an introduced species currently known to exist in WA, the NT and NSW as far south as Culcairn near Albury.

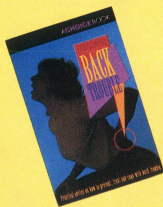
■ The salt marsh mosquito (*Aedes vigilax*) is the other common species in Australia. It is found along the northern coasts of Australia from NSW through Queensland, the NT and WA around to Perth. It is also found as far south as Mildura in NSW and in the South Pacific, Papua New Guinea and South-east Asia. Favourite breeding places include temporary brackish pools and marshes which are filled by high tides, usually well sunlit and often associated with saltwater couch grass and succulent plants. This is one of the principal pest mosquitoes of coastal Queensland. The diseases it carries are Ross River fever, which causes epidemic polyarthritis, and heartworm in dogs.

COMING SHORTLY AND DISCONTINUED

Since the completion of our tests, manufacturers have informed us they will be discontinuing three types of repellent: the BEE NATURAL lotion, BUG OFF pump spray and SANDY'S NATURAL pump spray. Also, the two OFFISKINTASTIC products have been reformulated, to include DPI. We have included them all in the report because they should still be available in shops and you may also have some in your bathroom cupboard.

In next month's issue of CHOICE we will be updating this article by reporting the results of tests on new-formulation AEROGARD pump spray, BUGLESS pump spray, lotion with sunscreen and cream, and SCRAM. They became available too late to be included in this issue.

CHOICE BOOKS

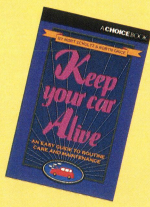


Understanding Back Trouble

Understanding Back Trouble offers clear advice on how to cope when you have back problems. It covers many topics including: how your back works and what can go wrong; how to cope with sudden back pain; when to call your doctor; examinations and tests; orthodox and alternative treatments; how to minimise back pain; and exercises. *Understanding Back Trouble* provides invaluable advice about developing and keeping a healthy back.

\$18 paperback 168 pp

Code: UBT



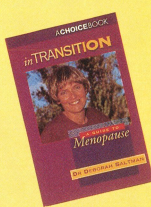
Keep Your Car Alive

An Easy Guide to Routine Care and Maintenance

The key to having a car that ages well is to prevent trouble before it happens. *Keep Your Car Alive* supplies all the information you need about routine maintenance to keep your vehicle in optimum condition. An extensive checklist will help all car owners — first-timers or old hands.

\$16 paperback 128 pp

Code: KYCA



In Transition

A Guide to Menopause

In Transition covers the issues surrounding menopause in a clear, easy to understand, non-patronising way. Topics include: your relationship with your doctor; HRT; osteoporosis; cancer; heart disease; incontinence and prolapse; and conventional and alternative strategies for dealing with problems which may arise.

\$17 paperback 184 pp

Code: IT



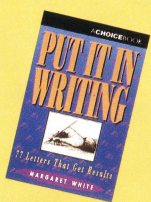
Facefacts

A Guide to Cosmetics, Skin and Hair Care

Beauty choices for the discerning cosmetics purchaser. *Facefacts* guides you through the thickets of advertising claims and distinguishes the hype from the hard facts, explaining phrases like 'hypoallergenic', 'comedogenic' and 'natural'. It looks at many issues, including testing on animals, how the sun damages your skin, and how best to protect it.

\$18 paperback 240 pp

Code: FF



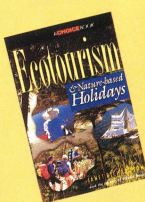
Put It In Writing

77 Letters That Get Results

We all know an effectively worded letter can get results, but quite often we give up before we start, because we don't know how to write the letter. This book contains 77 well-considered, cool and authoritative letters, written by a lawyer, which can be adapted to suit your situation.

\$16 paperback 168 pp

Code: PIW

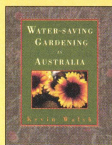


Ecotourism & Nature-Based Holidays

An insight into a new sort of holiday — ecotourism. Enjoy your surroundings while learning about them, and without creating havoc in the Australian environment. This guide gives you information about tour operators, resorts and other attractions.

\$17 paperback 224 pp

Code: ENBH



Water-saving Gardening in Australia

This book is perfect for those who want to use water wisely and still have a beautiful garden. It includes information about designing a water-efficient garden, how to minimise water needs in both city and country areas, and a comprehensive list of water-saving plants.

Code: WSGA



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MONEY-BACK GUARANTEE
If you are not completely satisfied with your purchase, return book(s) within 30 days for full refund of the purchase price.



Coping with the Family

Divided into three age groups (birth–6, 7–12, 13–18), this book looks at the most common problems facing Australian families in the 1990s. It includes professional advice and some children's own thoughts on the matter. Written by well-known child and family psychologist Dr John Irvine, this book is not only helpful but enjoyable to read.

\$17 paperback 274 pp

Code: CWTFF



Grandparenting

A new challenge

Becoming a grandparent is not a choice you can make, but the sort of grandparent you are is. *Grandparenting* helps grandparents to communicate effectively and understand and make the most of their role in today's families.

\$17 paperback 182 pp

Code: GP

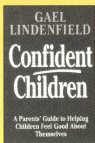


What You Can Change and What You Can't

This book clearly and realistically identifies the areas in your life you can change and helps you decide how to act upon them. Looking at the general and the specific, some of the areas covered include phobias, post-traumatic stress, weight control, alcoholism, depression and anger.

\$20 paperback 324 pp

Code: WYCC

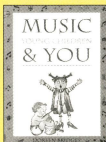


Confident Children

Confidence is an important and valuable part of anyone's make up — and every parent hopes their children will have confidence in their abilities and rights. This practical book helps parents to nurture the confidence of their children without making them precocious or arrogant. It also advises parents on building their own confidence with their parenting skills.

\$15 paperback 200 pp

Code: CONC

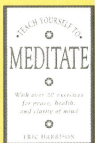


Music, Young Children & You

Everyone is born with some ability to respond to music, but these abilities can disappear if they are not developed, especially in the early years. This book is aimed at parents, teachers and carers of young children and offers advice on how to encourage a love of music in them.

\$25 paperback 160 pp

Code: MYCY



Teach Yourself to Meditate

This is an easy-to-follow guide to meditation, which can help you overcome the stresses of everyday life.

\$17 paperback 162 pp

Code: TYTM

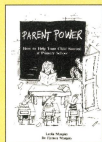


Fight-free Families

Looks at toddlers to teenagers and recommends applicable courses of action. You may not end up with a fight-free family but the strategies and exercises in this book will help you lessen stress and anxiety and increase communication within your family. Topics include: what rewards/punishments are effective; how to negotiate with teenagers; and how to run family meetings.

\$17 paperback 152 pp

Code: FFF



Parent Power

How to help your child succeed at primary school

Many parents feel intimidated by the system and take a back seat in their child's education once they go to school. *Parent Power* gives parents the confidence and knowledge to take a positive and active role in their child's education — at home and in school.

\$15 paperback 158 pp

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The Australian Résumé Guide

A practical workbook that helps you prepare effective résumés and letters for a greater impact in the competitive job market.

\$15 paperback 195 pp

Code: ARG



Portable stereos with detachable speakers tend to be bigger and more awkward to carry around than the traditional all-in-one box — especially if they don't have a proper handle.

PORTABLE STEREOS

How much portable sound does \$400 buy?

We looked at eight CD-based portable stereos in this price bracket to find out.

THE INTRODUCTION of the compact disc caused a revolution in the domestic hifi market, with a CD player becoming *de rigueur* for home stereo buyers. This trend has continued in the portable market, and the inclusion of a CD player in what used to be the humble radio/cassette is fast becoming the norm.

We last looked at portable stereos back in February 1990, when we reported on 15 twin-well radio/cassette players from the cheap end of the market. For this article we looked at portable stereos with a CD player that we could buy for \$400 — a popular price point — give or take \$30.

DIFFERENT STROKES

We found eight models in this price bracket. All are similar in that they include an AM/FM radio and can play CDs

and tapes, but they vary in the other features offered.

The PANASONIC RX-DT600, SONY, SHARP and AKAI have detachable speakers. These models look a little like a mini component hifi system and give you the advantage of being able to separate the speakers to give a better stereo effect. The speakers can be attached to the sides of the system for portable use.

Models with detachable speakers tend to be larger and more awkward to carry than the more traditional all-in-one box, but this may not worry you if you don't intend to lug it round with you very often. The AKAI is particularly awkward to carry because, instead of a conventional handle, it provides two indents for handholds in the sides of the main unit and needs both hands to carry.

All the models except the JVC and

SANYO have two cassette decks to allow tape-to-tape recordings. Dual-cassette models have been popular in recent years, but if you never need to copy tapes or already have a hifi system with a dual cassette, you won't miss the extra cassette deck.

The SANYO, though offering only a single cassette deck, includes a multi-disc CD changer which holds up to six discs at one time; it was the only multi-disc player we found for around \$400. Discs are inserted via a drawer and are stored internally. You can play tracks off any of the loaded discs at the touch of a button, or play each disc in sequence, giving several hours of continuous music.

Another difference between models was the radio tuning. The PANASONIC RX-DT401 and HITACHI both have a digital tuner with memories for storing

your favourite stations. All the other models have a knob or thumbwheel which moves a pointer on a dial.

HOW DO THEY SOUND?

The big question with any audio product is — how good does it sound? We listened to a range of music on both CD and cassette and assessed the quality of sound each model produced. We're happy to report they all performed reasonably well.

You won't get true hifi quality from this class of product, but you should expect a pleasant sound at an adequate volume level. Rather than accuracy (hifi components are usually judged on how close their reproduction is to the original recorded sound), we listened for a good, balanced sound with adequate levels of bass and treble. We adjusted the tone control and bass boost options on each model to get the best sound we could before assessing them.

All the models produced an acceptable sound and would be loud enough to fill a medium-sized room, but some handled

bass notes better than others. The JVC and SHARP were particularly good in this area, producing a nice solid bass sound without being too 'boomy'. The AKAI and SANYO struggled a little at the bass end and sounded slightly tinny as a result, though still acceptable.

The HITACHI has a button marked *3D System* which, according to the instructions, lets you "... enjoy the sound from the super woofer coming out from the central speaker". In fact, we found it was necessary to have the 3D System on to enjoy any bass at all. With it off, the sound was tinny with very poor bass. With the 3D System on, though, the sound was good.

EASE OF USE

With radio, cassette and CD to choose from and control, ease of use becomes an important consideration. The controls for each section should be logically grouped together, well labelled and intuitive to use. Good, easy to read instructions also help.

The best way to find out how easy something is to use is to use it, and that's what we did. As well as the basic jobs like tuning in the radio and playing a CD and cassette, we also looked at how easy it was to load and unload CDs and tapes, the ease of switching between the various functions, recording from radio and CD and how the different features interacted with one another.

The PANASONIC RX-DT401 is the easiest to use overall. It has well labelled controls which are logically grouped. Most operations are intuitive, but the well set out and easy-to-read instruction manual is helpful if you get stuck.

The labelling of controls on the SHARP, particularly those for the CD and radio, is a bit cluttered and tends to confuse the eye rather than aid in finding the right button or setting.

The ease of use scores given to each model are listed in the table overleaf, and the profiles below give a summary of good and bad points.



JVC RC-X320

A basic model with a single cassette deck and manual radio tuning. It is quite easy to operate, though the instructions aren't very well laid out. It has the equal best sound quality and best technical performance of the models tested. Basic but good overall.



PANASONIC RX-DT401

This model is well featured, with a dual cassette deck and a digital tuner. It's the easiest to use of the models tested, with well marked and logically laid out controls and good instructions. The sound quality is good and overall it's the best of the dual-cassette models.



PANASONIC RX-DT600

Featuring a dual cassette deck and detachable speakers, this model is generally easy to use, with well marked and logically laid out controls and good instructions. The sound quality is good. Along with the Sony, it's the best of the models with detachable speakers.



SONY CFD-550

Another model with a dual cassette deck and detachable speakers. It is generally easy to use, with well marked and logically laid out controls and good instructions. The cassette decks don't turn off automatically at the end of the tape when fast forwarding or rewinding, which can be a little inconvenient. The sound quality is good. It comes with a remote control which can be used to operate the CD player and adjust the volume. Along with the Panasonic RX-DT600, it's the best of the models with detachable speakers.

TECHNICAL PERFORMANCE

The performance of the speakers tends to be a limiting factor in how portable stereos sound. The listening test, discussed earlier, assessed the overall sound quality of the units, but it's also important to look at how well the main components (the CD player, tape deck and radio) handle their jobs. To this end we carried out a number of technical tests and looked at how each model performed.

Our tests looked at areas like the ability to handle weak radio signals, how much hum and noise are present, how well the speed of the tape and CD is controlled, how accurately tapes are copied, and a host of others.

While there were slight differences, none of the models had any serious drawbacks and all performed quite well.

WHAT TO BUY		
JVC RC-X320		\$339*
PANASONIC RX-DT401		\$399
equal PANASONIC RX-DT600		\$399
SANYO CFD-550		\$429

Prices shown are a good target to aim for when shopping around, based on nationwide checks in October 1994.

* When we bought the JVC for testing we paid \$370, but when we checked prices in our nationwide survey we found a number of stores selling it for much less.

The JVC was the top overall performer and the equal best for sound quality. It's a fairly basic model with a single cassette deck and manual tuning for the radio, but its well balanced sound combined with good technical performance and ease of use make it a worthwhile buy.

If you need the ability to copy tapes, the PANASONIC RX-DT401 was the best of the dual-cassette models. It was the

easiest to use, with very well laid out and labelled controls. It also has a digital tuner with preset memories to store your favourite stations.

The PANASONIC RX-DT600 and SONY performed equally well and were the best of the models with detachable speakers. They have the advantage of letting you position the speakers separately from the main unit, but are bulkier than the all-in-one models.

These four models were the top performers, but we think you'd be happy with any of those we tested, particularly if you found one at a bargain price. Special mention should be made of the SANYO MCH 900F. Though slightly behind most of the others in sound quality, it did have a six-disc CD changer. If this feature appeals to you the SANYO is worth a listen.



SHARP CD550E

This model also has a dual cassette deck and detachable speakers. It has equal best sound quality of the models tested but is let down a little by a front panel and controls with cluttered labelling.



HITACHI CX-W500W

This model has a dual cassette deck and digital tuner. The record deck has full auto-stop but the play deck doesn't turn off automatically at the end of the tape when fast forwarding or rewinding, which can be a little inconvenient. The play deck, however, is auto-reversing. The sound quality is good, but we found it necessary to have the bass boost feature on to get an acceptable sound. This model comes with a remote control which can be used to operate the CD player and adjust the volume. The instructions are poorly laid out and hard to read, and some of the front panel labelling is a little indistinct, making this model the least easy to use of those tested.



SANYO MCH-900F

This was the only model we found in our \$400 price bracket with a multi-disc CD changer; it can hold up to six discs. Its other features are fairly basic: a single cassette deck and manual radio tuning. The multi-disc facility is reasonably easy to use but it does take a little time to swap discs. Discs are taken in and out through a motorised drawer, which can only be activated in CD mode. This is a little inconvenient in that you can't get CDs into or out of the unit while listening to a tape or the radio. The sound is reasonable but lacks a little bass.



AKAI PJ-W515CD

Another model with a dual cassette deck, manual radio tuning and detachable speakers. Discs are placed on a motorised drawer, which can only be activated in CD mode, causing the same minor inconveniences as with the Sanyo. It's generally easy to use but the CD controls aren't as well laid out or labelled as some. Rather than a conventional handle, indents at the sides of the system serve as handholds and mean you have to use two hands to carry it. The sound is reasonable, but lacking in bass and considered the worst among the models tested.

Portable stereos

1 2 3 4

Brand and model (in rank order)	Manufacturer/ distributor	Origin	Target price (\$)*	Warranty (years)	Weight (kg)**	Dimensions: H x W x D (mm)	10" size batteries	Detachable speakers	Dual cassette	Full cassette auto-stop	Digital tuner	AM band
JVC RC-X320	Hagemeyer	Japan	339	ns (A)	4.63	185 x 575 x 245	8			✓		SW, MW
PANASONIC RX-DT401	Panasonic	Singapore	399	1	5.49	185 x 610 x 260	10 (B)	✓	✓	✓	✓	LW, MW
PANASONIC RX-DT600	Panasonic	Singapore	399	1	6.09	250 x 615 x 235	8	✓	✓	✓		MW
SONY CFD-550	Sony	Malaysia	429	1	5.72	245 x 640 x 220	6	✓	✓			MW
SHARP CD550E	Sharp	Malaysia	399	1	6.67	275 x 625 x 230	8	✓	✓	✓		LW, MW
HITACHI CX-W500W	Hitachi	Singapore	450	1	6.59	215 x 630 x 260	8		✓	(C)	✓	SW1, SW2
SANYO MCH-900F	Sanyo	Malaysia	399	ns (A)	5.05	230 x 460 x 280	8 (B)			✓		MW
AKAI PJ-W515CD	Akai	Korea	399	1	6.64	285 x 615 x 235	9	✓	✓	✓		MW

* Prices shown are a good target to aim for when shopping around, based on nationwide

checks in October 1994.

** Without batteries.

ns Not stated

(A) The manufacturer says the warranty is one year.

(B) Four AA batteries are also required to retain some memory settings when mains power is disconnected.

(C) Record deck only; see profile on page 39.

(D) Feature operates across all loaded discs.

BUYING TIPS

Here are a few general tips to keep in mind when shopping around for a portable stereo.

■ **Think about what configuration you want.** Do you need a dual-cassette model? Will you be able to take advantage of detachable speakers? Are there any size limitations if the system must sit on a bookshelf or wall unit?

■ **Take along your own music:** It's always better to judge a system's sound quality with music you're familiar with and are likely to be playing, so take along a couple of your favourite tapes and CDs and use the same tracks to compare all the models you look at.

■ **Listen long and hard:** Give any prospective system a good listening to and don't let the salesperson rush you. Turn the volume up to a comfortable level and also make sure the sound doesn't distort at higher volumes. It's often a bit intimidating to make all that noise in a shop, but store owners should take this into account when setting up a display area for audio products.

■ **Check out the noise:** Put in a blank tape or listen to the breaks between tracks on a tape or CD to see if there's excessive hum or noise.

■ **Fiddle.** Play with all the knobs and buttons to see what they do. The main controls should be well labelled and their function fairly obvious. You should be able to work out the basic functions of the model without having to look up the instructions.

■ **Flip through the instructions.** Ask to have a look at the instruction manual. It should be well laid out and easy to read, with good illustrations.

Don't be fooled by the labels: PMPO is just one way of measuring power output, and it probably won't rattle your windows.

AI

AVEC LECTEUR CD
CASSETTE RECORDER

PJ-W515CD

HIGH POWER OUTPUT 48 WATTS (PMPO)

KARAOKE MIC MIXING

BASS/TREBLE TONE CONTROLS

PORTABLE HIGH QUALITY MINI SYSTEM
WITH DETACHABLE SPEAKERS



POWER WITHOUT GLORY

When looking at portable stereos you'll quite often see impressive-sounding power ratings emblazoned on the brochures or front panel. Figures like 60 or 80 watts conjure images of window-rattling volume levels and gut-thumping bass, but don't be fooled. The manufacturers often quote the power of portable stereos in terms of something called 'peak music power output' or PMPO to make the numbers look impressive.

While PMPO is one way to measure an amplifier's power, confusion arises because component hi-fi amplifiers tend to have figures listed for continuous power output rather than PMPO. A hi-fi amplifier with a rating of 80 watts continuous power output may well, with appropriate speakers, produce deafening volume. A portable stereo which claims an output of 80 watts PMPO, on the other hand, may well only produce a few watts of continuous power and sound nowhere near as loud.

The bottom line is, don't take much notice of big power claims when looking for a portable stereo. The most reliable way to judge whether a portable system has enough grunt to satisfy your needs is to take along your favourite tape or CD, put it in and wind up the volume.

	6	7	8	9	10	11	12	13	14	
FM stereo indication	CD type	CD shuffle play	CD track intro play	Remote control	Sound quality score (%)	Ease of use score (%)	Technical performance score (%)	Overall score (%)	Brand and model (in rank order)	
	Top-loading				73	70	91	78	JVC RC-X320	
✓	Top-loading				70	80	82	76	PANASONIC RX-DT401	
✓	Top-loading				70	70	87	75	PANASONIC RX-DT600	equal
✓	Top-loading	✓	✓	✓	70	70	87	75	SONY CFD-550	
✓	Top-loading	✓			73	60	83	73	SHARP CD550E	
✓	Top-loading	✓		✓	70	55	85	72	HITACHI CX-W500W	equal
	Drawer, 6 discs	✓ (D)	✓ (D)		65	70	86	72	SANYO MCH-900F	
✓	Drawer	✓	✓		63	65	87	71	AKAI PJ-W515CD	

1 Dual cassette

All models with a dual cassette have one deck for recording and playback and one for playback only. All allow both normal and high-speed dubbing from tape to tape.

2 Full cassette auto-stop

All models automatically stopped during record or playback when the end of the tape was reached. Models marked with a tick in this column will also stop when fast forwarding or rewinding. On models without this feature the stop button has to be manually pressed when the tape finishes fast winding.

3 Digital tuner

Models with a digital tuner have several presets for storing radio stations and include features for automatically searching bands. Models without digital tuning have a knob or thumbwheel for tuning, with a pointer and scale to indicate the frequency.

4 AM bands

Several models allow reception of various AM radio bands. The table indicates which bands are available. SW, MW and LW stand for short wave, medium wave and long wave respectively. In Australia the commercial AM radio stations broadcast on the MW band.

5 Manually selectable FM mono

The radio on all models automatically detected when an FM station was being received in stereo. When an FM station's signal is weak the sound can become noisy. Switching the reception to mono can sometimes decrease the level of noise and make the station clearer (though you miss out on the stereo effect).

6 FM stereo indication

Models with a tick in this column have some form of indication that a stereo FM signal is being received. This can be useful when tuning.

7 CD type

Models with a top-loading CD have a pop-up lid on top of the player to allow the disc to be placed on the spindle. The lids on all these players are manually operated, allowing you to take out or put in a disc even when you're listening to the radio or tape.

Drawer-type players have a drawer or tray which slides out for loading the CD. The drawer mechanism is motorised and can only be operated when the CD player is selected. This can be a little frustrating if, for example, you switch from listening to a CD to playing a tape and then realise you haven't taken the CD out of the drawer. You would need to switch back to CD mode before you could get the disc out.

The SANYO's multi-disc CD changer allows up to six discs to be stored in it at a time. The discs are inserted or removed one at a time through a motorised drawer.

8 CD shuffle play

Models with this feature, sometimes called random play, can be set to play all the tracks on a CD in a random order.

9 CD track intro play

Models with this feature can be set to play a short segment from the start of each track on a disc. This is useful if you want to find a particular track and don't have the CD cover handy.

10 Remote control

Models with a tick in this column come with a remote control which can be used to operate the CD player and adjust the volume. The remotes are limited in that they don't allow you to operate the cassette deck or adjust the tone or radio tuning.

11 Sound quality score

These are the scores for the listening test. We listened to a variety of music from CDs and tapes, and looked for general pleasantness and acceptability rather than hifi accuracy when assessing sound quality. If necessary we adjusted the tone controls to give the best sound possible. See the main article for more details.

12 Ease of use score

The ease of use score is based on an assessment of how easy it was to perform the basic functions and use the features on each model. We looked at the size, shape, labelling and layout of the controls, the quality of the instructions and the usefulness of the displays and indications.

13 Technical performance score

The technical performance score was derived from the results of a variety of technical tests performed on each model. These included frequency response, distortion, signal to noise ratio, tape speed error and radio sensitivity. The results from each section (radio, tape and CD) were combined to give the overall technical performance score listed.

14 Overall score

The overall score was a combination of sound quality, ease of use and technical performance, weighted as follows:

- Sound quality: 50%
- Ease of use: 20%
- Technical performance: 30%



CHIPPER/SHREDDERS

They're good for the garden but noisy and often tedious to use.

Our tests of 12 electric garden mulchers found some were much more user-friendly and efficient than others — and the most expensive one scored worst overall.

GROWING NUMBERS OF GREEN gardeners, aware of the benefits of recycling, are buying chipper/shredders to dispose of their backyard and kitchen rubbish and protect and nourish their garden at the same time.

Like a giant food processor, a chipper/shredder will reduce an unwieldy heap of tree and shrub cuttings, leaves, household fruit and vegetable waste and even old newspapers into a few bags full of blended organic garden food. The mulch produced can be used immediately to give the soil a protective covering which helps control weeds and holds in moisture, reducing the need for watering. Or the mulch can be put on a compost heap, where it will break down faster than unshredded garden and kitchen waste. Alternatively, you could use wood chippings as a garden path. And with a chipper/shredder, the need for backyard burning, already banned in many areas, is eliminated and you'll have fewer trips to the tip.

But before rushing out to buy one, consider how frequently you need to prune and dispose of leaves and how

often you're likely to use a chipper/shredder. Even the cheapest models cost several hundred dollars, so it may be worthwhile to 'go halves' with a neighbour. Hiring is another option. If you're hiring, make sure you get the full instructions and see the shredder in operation. Often only the larger, more powerful petrol shredders are available for hire.

Using a shredder is tedious, time-consuming and noisy work, and if it jams frequently it can shred your nerves too! You might find it less hassle and more economical to let your council dispose of your garden rubbish for you; it might even have a free shredding service. (We know of one Sydney council which experimented with such a service and recently discontinued it "due to lack of interest".)

However, most chipper/shredder owners reportedly feel their purchase is worthwhile. It can be very satisfying seeing that untidy scrapheap returned to the soil. And if you buy a good machine, you may even find shredding can be a pleasurable experience. (Just make sure you don't shred relations with your neigh-

bours by chipping away at the crack of dawn!)

ELECTRIC OR PETROL?

We chose to test electric shredders, because they are much more popular than petrol ones with home users (accounting for 90% of sales for domestic use). This is probably because they're smaller, easier to move around and considerably cheaper than petrol-powered machines. Professional gardeners tend to use petrol-powered shredders because they can handle larger quantities of waste and cope with thicker branches than electric models. But unless you have a large property or a number of large trees to prune, a more economical and more easily handled electric machine is probably preferable.

OUR TESTS

We tested 12 electric shredders currently available in Australia (see the table on page 44). The models were compared for performance, ease of use, tendency to clog and safety features.

To test the capacity of the machines,

WHAT TO BUY

Recommended models are listed in rank order. Prices shown are a good target to aim for when shopping around, based on nationwide checks in September 1994. Anything lower is a bargain.



AL-KO DYNAMIC H2200S

Target price: \$630

Shreds branches up to 35 mm diameter.

Good points

- Produced a very high volume of mulch.
- Good safety features.
- No 'rebound' (twigs don't bounce back out of the chute).
- Well-balanced, large handle.
- Easy mulch collection.
- Easy blade change.

Bad points

- Large branches must be control fed.



ROVER 09664 MAXI MUNCHER

Target price: \$600

Shreds branches up to 35 mm diameter.

Good points

- Produced a very high volume of mulch.
- Good safety features.
- Large feeder access, very easy to feed.
- No rebound.
- Well-balanced, large handle.
- Bag provided for easy mulch collection.

Bad points

- Makes a booming noise.



AL-KO DYNAMIC H1600S

Target price: \$530

Shreds branches up to 30 mm diameter.

Good points

- Produced a high volume of mulch.
- Good safety features.
- No rebound.
- Well-balanced, large handle.
- Easy mulch collection.
- Easy blade change.

Bad points

- Nothing in particular.

We measured the volume of lantana and bottlebrush they could process in 10 minutes. The best performers were the AL-KO Dynamic H2200S and the ROVER 09664 Maxi Muncher, which each produced 10 kg of mulch in 10 minutes. Not far behind was the AL-KO Dynamic H1600S at 8 kg/10 minutes. Poorest performers were the BLACK & DECKER GA100 and the ROVER 97365 Muncher, both of which produced only 2.5 kg, while the rest produced between 4 and 6.5 kg in 10 minutes.

We also tested the size of material each model could shred by using different sizes of dowl up to the maximum recommended by each manufacturer. The maximum-diameter dowl we used was 45 mm. We were unable to obtain dowl between 42 and 44 mm diameter so we were unable to test Victa's claim that its branch feeder can process 43 mm branches. However, we found it could cope with 41 mm dowl. This was the maximum diameter any shredder could handle in our tests and was also achieved by the MASPORT and CHIPPER/CHOPPER. We expected that the COX C40E,

being the largest and one of the two most powerful electric shredders, would be able to cope with thick branches. However, although the throat opening is 43 x 44 mm, we found the largest-diameter dowl the COX could manage was 35 mm.

USING THEM

A good chipper/shredder should be easy to move and to feed. It should run smoothly, without clogging, after minimal preparation of the material, and produce mulch which can be easily collected, rather than strewn in all directions.

A mulcher needs to be easy to move around your backyard. Most of the models we tested had wheels and were fairly easy to move around. However, despite having wheels, the MASPORT, the VICTA and the COX (a particularly large and cumbersome machine) were difficult to manoeuvre because of their poorly placed handles. (Victa told CHOICE it recently replaced the handles and wheels on its shredder with larger ones.) Although the BLACK & DECKER model

doesn't have wheels, it was light and not hard to carry. The only other shredder without wheels — the AL-KO Pro H1600XR — was heavy (19 kg) and awkward to move.

Some models are designed so that the hopper or top chute takes only small material, such as leaves, while larger items are fed into the path of flailing knives or cutters via a tube at the side. We found the ROVER Maxi Muncher, where you simply drop all material into the hopper, by far the easiest to feed. All other models required some force or the material had to be guided into the machine. And with the MASPORT, CHIPPER/CHOPPER, VICTA and COX, branches had to be held (while they twisted and vibrated uncomfortably against our tester's hands) to prevent them from bouncing out.

All the models we tested produced the same-sized chippings, but there were marked differences in the ease of collecting them. Models with hooks for attaching a bag over the outlet (the ROVER Maxi Muncher, the BLACK & DECKER and all the AL-KO models) were the most convenient. Although the outlets on some

(the CHIPPER/CHOPPER, MASPORT and VICTA) are high enough to allow you to place a bin or wheelbarrow underneath the outlet, they sprayed material past it, while the COX spewed mulch in all directions under the machine.

When considering ease of use, we also examined how difficult it was to change the cutting blades. The only problems we encountered were with the COX and CHIPPER/CHOPPER. To gain access to the knife in the COX, you first have to remove the belt, belt cover, rotor pulley, cover-plate bearing, rotor and the hammers. With the CHIPPER/CHOPPER, not only blade-changing was a problem, with no means for locking the blades; assembling the unit was also quite difficult, with no assembly instructions provided. The manufacturer has told us the CHIPPER/CHOPPER should be assembled when you buy it. This wasn't the case with the one we bought.

Even with careful handling (see *Shredding tips*, opposite), all shredders can clog, but some have a much greater tendency to do so than others. The AL-KO Pro series and the COX clogged so often and were so awkward to clear that we can't recommend them.

SAFETY

Most current models have adequate safety features. All have clear safety instructions (see *Safety tips*, opposite), and it was not possible to touch the rotating blades of any of the models we tested when feeding them.

Two models — the VICTA and the MASPORT — are hazardous around the discharge area as they tend to hurl material horizontally, so that it misses the collection bin and could injure an observer in the line of fire.



Four models clogged so often and were so awkward to clear we decided they belong on our 'not recommended' list — see the table above.

Chipper/shredders

Brand/model (in rank order)	Manufacturer/ distributor	Origin	Warranty (years)	Target price
AL-KO Dynamic H2200S	Al-Ko	Austria	3	630
ROVER 09664 Maxi Muncher	Rover	Australia	1	600
AL-KO Dynamic H1600S	Al-Ko	Austria	3	530
ROVER 97365 Muncher	Rover	Australia	1	370
CHIPPER/CHOPPER CC3000 Magnum	Allpower	Taiwan	not stated (A)	450
MASPORT 2500	Masport	Taiwan	not stated	380
VICTA VM 3000	Victa	not stated	not stated (A)	380
BLACK & DECKER GA100	Black & Decker	Germany	1	320
NOT RECOMMENDED				
AL-KO Pro H2200	Al-Ko	Austria	1	600
AL-KO Pro H1600	Al-Ko	Austria	1	470
AL-KO Pro H1600XR	Al-Ko	Austria	1	380
COX C40E	Cox Mower	Australia	1	830

* Prices shown are a good target to aim for when shopping around, based on nationwide checks in September 1994.

(A) Manufacturer says the warranty is one year.

Most machines will throw some material back towards you: that's why you need a pair of safety goggles and protective gloves. Only the CHIPPER/CHOPPER, MASPORT and the VICTA, however, throw material out with enough force to possibly bruise your legs or arms. Some models have a flap over the main and/or branch feeder chute to help prevent rebound.

With the exception of the BLACK & DECKER, all models with a removable hopper have an interlock device which automatically cuts power to the machine as the hopper is removed. The AL-KO and CHIPPER/CHOPPER models have taken this a step further by making the machines inoperable unless the hopper is locked (not just sitting) in place. The ROVER Maxi Muncher also has a safety

brake which stops the blades immediately. As the BLACK & DECKER has no interlock switch, it's important to switch off the machine and unplug it before removing the hopper. Bearing in mind that interlock switches may occasionally fail, it's wise to do this before opening any chipper/shredder.

As an extra safety feature, part of the on/off switch for the CHIPPER/CHOPPER, MASPORT and VICTA can be removed to make the machine inoperable, so the kids can't go showing off the new family toy to their mates.

WHAT TO BUY

AL-KO Dynamic H2200S	\$630
ROVER 09664 Maxi Muncher	\$600
AL-KO Dynamic H1600S	\$530

We found the AL-KO Dynamic models and the ROVER Maxi Muncher by far the best performers and the easiest to use. The ROVER Maxi Muncher is particularly comfortable to use as the material requires little preparation and needs only to be dropped into the feeder chute. The BLACK & DECKER and ROVER 97365 Muncher were slow to process mulch, but they're not so expensive (costing around \$320 and \$370 respectively) and would be quite adequate for a small, bushy garden.

The three AL-KO Pro series and the COX are not recommended due to their high tendency to clog and the difficulty in clearing them, particularly the AL-KO Pro series. We also found that a bigger shredder is not necessarily a better one. Indeed, the COX — the largest and most expensive of all available electric chipper/shredders — scored worst overall.



Our tester wore safety glasses and work gloves; when using a chipper/shredder we recommend you do too.

	1	2	3	4	5	Brand/model (in rank order)	
	Clog-free running score (%)	Ease of use score (%)	Performance score (%)	Safety score (%)	Overall score (%)		
	95	95	100	95	97	AL-KO Dynamic H2200S	
	100	96	100	90	96	ROVER 09664 Maxi Muncher	
	95	95	80	95	90	AL-KO Dynamic H1600S	
	100	82	25	90	68	ROVER 97365 Muncher	
	95	55	60	70	67	CHIPPER/CHOPPER CC3000 Magnum	equal
	100	53	65	65	67	MASPORT 2500	
	100	53	50	65	62	VICTA VM 3000	
weighs 10 kg	85	77	25	60	55	BLACK & DECKER GA100	
						NOT RECOMMENDED	
	0	91	60	95	70	AL-KO Pro H2200	
	0	93	50	95	67	AL-KO Pro H1600	
weighs 19 kg	0	67	40	95	58	AL-KO Pro H1600XR	
	15	17	60	60	46	COX C40E	

1 Clog-free running

A low score indicates a high tendency to clog as well as difficulty in removing clogged material (each of these factors is 50% of the score). The four models not recommended all scored very poorly for clogging.

2 Ease of use

This includes manoeuvrability (20%), ease of feeding (30%) and collection of material (30%), and ease of changing blades (20%).

3 Performance

The capacity of the shredders was tested by measuring how much of a mixture of lintana and bottlebrush they could process in 10 minutes.

4 Safety

Automatic power cutout if the hopper is removed accounts for 30% of the safety score, lack of rebound when feeding 30%, no access to the blades when operating 30% and other safety features 10%.

5 Overall Score

The above four factors were weighted as follows to achieve the overall score:

- Tendency to clog: 13%.
- Ease of use: 20%.
- Performance: 34%.
- Safety: 33%.

SHREDDING TIPS

To reduce clogging:

- Feed material in gradually, rather than jamming it all in at once.
- Trim and prune branches, especially larger ones, before shredding.
- Woody prunings are best shredded while fresh, but allow soft, green material to dry out for a few days first and alternate it with woody waste to remove any build-up of mush inside the housing.
- Ensure the shredder is as empty as possible before switching it off to prevent it from jamming when you next start it up.
- Keep blades sharp. Most blades can be sharpened and turned over to extend their use.
- Remove soil from roots before shredding, as earth and stones quickly wear down cutting blades.
- Don't try to shred soil, stones, glass, rags, metal, bone or plastic.
- If you're adding shreds to your compost heap, don't shred weeds containing seeds and avoid using diseased or sprayed cuttings as compost.

SAFETY TIPS

- Read the instructions.
- Wear safety glasses or goggles to protect your eyes. Debris could blow back from the machine and strike you in the face.
- Wear heavy work gloves to protect your hands from sharp prunings and to dampen vibration as you feed in material.
- Keep clothing and jewellery away from moving parts.
- Operate the shredder only on level ground.
- Don't use an electric shredder if it's raining; don't leave it out in the weather; and keep it away from sprinklers.
- Make sure you have a safe extension lead, and we recommend you use a safety switch (see CHOICE, May 1994).
- If the shredder clogs, switch it off, unplug it and ensure the blades have come to a standstill before removing the hopper to access the blades. (Stalling or overloading should cause the motor to cut out automatically to prevent overheating.)
- Don't put hands into inlets or outlets.
- Keep bystanders, especially children and pets, well away when using the shredder.
- Switch off and unplug the shredder before leaving it.



WHAT DO YOU KNOW?

- 1** If a charity has its fund-raising appeals registered, it does not have to pay income tax. Donations to such registered charities are tax-deductible. True or false?



- 2** What does BMI stand for?
 A) Business and Manufacturing Industry.
 B) Body Mass Index.
 C) Business Machines International.
 D) Bayerische Motorindustrie.

- 3** Compared with regular milk, "reduced-fat" milk contains how much less fat?
 A) 30% less.
 B) 50% less.
 C) 60% less.
 D) 75% less.

- 4** What is a Femidom?
 A) A cathedral for women only.
 B) A female condom.
 C) A breast prosthesis.
 D) A matriarchate.

- 5** Carbohydrates should provide about how much of your daily energy intake?
 A) 85%.
 B) 15%.
 C) 55%.
 D) 25%.

- 6** What does CRAA stand for?
 A) Credit Reference Association of Australia.
 B) Consumer Rights Association of Australia.
 C) Corporate Research and Advertising Agency.

- 7** Roughly half the Australian population needs vision correction. Of these people, how many choose contact lenses?
 A) Less than 1%.
 B) About 3 to 5%.
 C) About 30 to 50%.

DATES FROM HELL N°164
 JULIA LOSES HER CONTACTS
 IN THE SPAGHETTI MARINARA



- 8** People with short or long sight can generally have their vision corrected with contact lenses, but the age-related gradual loss of the ability to focus can only be corrected with spectacles. True or false?

- 9** A healthy cornea has no blood vessels to supply oxygen to the eye, so where does the eye get oxygen from?
 A) From the air around us.
 B) From air dissolved in tears.
 C) From the water that gets into eyes when we wash or shower.

- 10** Peanuts are native to Africa. Early explorers and missionaries discovered them and introduced them into Europe. True or false?



ANSWERS

- 1. False.** One has nothing to do with the other. Fund-raising appeals are registered by state authorities, whereas taxation matters are handled by the Commonwealth. For more details, see *Charities*, CHOICE, June 1994.
- 2. B.** To calculate your body mass index, divide your body weight (in kilograms) by the square of your height (in metres). For example, a 165 cm woman who weighs 59 kg has a BMI of $59 \div 1.65^2 = 21.7$. A BMI of 20–25 is considered normal, less than 20 underweight and over 30 obese.
- 3. B.**
- 4. B.** It's a flexible sheath made from lubricated polyurethane which lines the vagina. For more details see *What's new in birth control*, CHOICE, October 1994.
- 5. C.** Complex carbohydrates should provide 40 to 50% of

energy and simple carbohydrates (sugars) not more than 15%. Fat should provide less than 30% and protein about 15%.

- 6. A.** It's the organisation that's likely to hold a file on you if you've applied for a loan lately.

7. B.

- 8. False.** Contact lenses can correct most vision deficiencies, but certain problems may require custom-made lenses.

- 9. B.** If the eye is deprived of oxygen from this source, blood vessels may grow into the cornea. If left untreated, the cornea will suffer from oxygen starvation and become more susceptible to some eye and vision problems.

- 10. False.** They're native to Brazil and were introduced into Africa and North America.



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If you find a recall or ban not on our list, please let us know. Companies often rent 008 or 1800 numbers for a couple of months after the recall is announced. If the number given is no longer operating, phone the manufacturer or retailer direct.

The Reject Shop has recalled \$2 MAGIC BALLOON BLOWPIPES, as the products contain chemicals which may be hazardous if inhaled. Return to your nearest Reject Shop for refund.

Foldaway has recalled CENTURY CHILD RESTRAINT EXTENSION STRAPS TS304 because of faulty stitching. Only batch 957 (the number is displayed on the white tag) of the 300 mm Tether Extension TS304 is affected. Phone Foldaway on 008 813 767 for a free replacement.

General Motors-Holden's Automotive has recalled VR COMMODORE AND CALAIS motor vehicles with 3.8 litre V6 engines and cruise control (both factory-fitted and accessories), as the cruise control cable could become dislodged from the cable bracket, causing the throttle to remain partly open. Only vehicles with production serial numbers from L645551 to L686798 (generally built during 1993) are affected. The serial number (the last seven figures of the ISOVIN number) is located in the left-hand-side lower corner of the windshield. Affected vehicles which have already had the necessary repairs done can be identified by a small label, placed on the front right-hand door pillar, referring to Field Product Campaign No. 93-H-02. If your vehicle has such a label, you don't need to take any action. If your vehicle is in the affected range and you don't have such a label, contact your Holden dealer so the necessary repairs can be done.

I 1 Case (Australia) has recalled CASE TRACTORS in the following ranges:

- All 7100 series (Magnum).
- All 7200 series (Magnum) to JJA005 1207.
- All 5100 series (Maxxum) with telescoping steering wheel to J1F1030237.
- All 5200 series (Maxxum) with telescoping steering wheel to J1F1030237.
- All 2094 through 4994 series (20-, 22-, 23-, 25-, 32-, 33-, 35-, 44-, 46-, 48-, 4994).
- All 1896 series.
- All 2096 tractors.

A fault in the telescoping steering column may cause loss of steering control, which could result in an accident and serious injury. Call your local Case IH dealer for repairs or phone the national service manager on (02) 673 7777 if you have trouble locating your nearest dealer.

TWELVE MONTH INDEX

FEBRUARY 1994 — JANUARY 1995

(T) Test
(D) Includes assessment of suitability for people with disabilities
(U) Update of previous report
* Additions or corrections to reports, small follow-up items, or letters

Aids for the disabled	Nov	Fabrics, sunscreen	Jan (T)	Microwave queries answered	Apr
Alarms, personal emergency	Apr (T,D)	Fan heaters	Jun (T,D)	Mobile phones	Aug (T), Nov*
Annual buying guide	Dec	Fans, pedestal	Oct (T)	Mosquito repellents	Jan (T)
Artificial sweeteners	May	Fast foods	Apr (T)		
Australian products, buying	Feb, Aug*	Fleas, controlling pets' Food	Feb	Nutrition information trends	Aug
Baby monitors	Nov (T,D)	artificial sweeteners	May	Older people, caring for	Jan
Bank service	Sep	fast foods	Apr (T)	Oven cleaners	Sep (T), Nov*
Binoculars	Mar (T)	frozen meals	Sep (T)		
Birth control, methods of	Oct	healthy eating	May	Paint, exterior	Aug (T), Oct*
Bulbar dangers	Jun	nutrition information trends	Aug	Pâté	Jun (T)
Buying Australian	Feb, Aug*	pâté	Jun (T)	Pedestal fans	Oct (T)
Buying a fitted kitchen	Sep	peanut butter	Jul (T)	Peanut butter	Jul (T)
Buying guide, annual	Dec	trends	Dec	Petrol, half lead	Oct
		Food processors	Nov (T,D)	Plastics recycling	Jun
Cars		Ford truck warranty	Jul	Portable stereos (with CD player)	Jan (T)
bullbar dangers	Jun	Frozen meals	Sep (T)	Prescription drugs, cheaper	Jan
crash tests	Aug			Privacy of information	Feb
half lead petrol	Oct	G-Code programmer	Jun (T)	Public transport	Sep
extended warranties	Feb	'Green' organisations	Oct		
recalls	Dec			Refrigerators, 395-450 litre	Feb (T,D)
reliability survey	Mar	Half lead petrol	Oct	Reliability survey, cars	Mar
roadworthiness	Apr	Health insurance	May, Aug*	Repellents, mosquito	Jan (T)
Carers, services for	Apr, Oct*	Healthy eating	May		
Caring for older people	Jan	Hearing aids	Apr, Oct*	Safety switches	May (T)
Carpets		Heaters, fan	Jun (T,D)	School sponsorship	Apr
buying	Mar	Hot water trial	Sep	Selling your home	Jun
'unstable'	Oct (T)			Solar lamps	Oct (T)
Chainsaws	Jul (T)	Income protection insurance	Jul, Oct*	Sparkling wine and champagne	Dec (T)
Champagne and sparkling wine	Dec (T)	Index, four-year	Jun	Stalking	Mar
Charities	Jun	Insect repellents	Jan (T)	Statutory derivative action	Aug
Childcare	Oct, Nov	Insurance		Stereos, portable (with CD player)	Jan (T)
Chipper/shredders	Jan (T)	information brochures	Aug	Strata management	Dec
Clothes dryers	Feb (T,D)	health	May, Aug*	Strollers, layback umbrella	Aug (T,D)
Compost bins	Dec (T)	income protection	Jul, Oct*	Sunscreen fabrics	Jan (T)
Contact lenses	Jul	letter-writing guide	Apr	Supermarket survey	Jul
Contingency fees	Jan	Investment, ethical	Jun		
Contraception, methods of	Oct	Investment options	Mar	Telephone, privacy	Jun
Credit card costs	Jan	Irons	May (T,D)	Telephones, mobile	Aug (T), Nov*
Credit Reference Association	Sep			Televisions, large-screen	Jun (T)
		Kitchen, buying a	Sep	Toasters	Mar (T,D)
				Transport, public	Sep
Deadlocks	Dec (T)				
Disabled, aids for	Nov	Lamps, solar	Oct (T)		
Drugs, cheaper prescriptions	Jan	Lawn trimmers	Oct (T)	'Unstable' carpet	Oct (T)
		Life insurance commissions	Aug		
EnergyCard	Jan	Locks, exterior door	Dec (T)	Vacuum cleaners, low-priced	Jul (T,D)
Ethical investing	Jun			Video recorders	May (T)
Extended warranties for cars	Feb	Market competition	Mar		
Eyes, looking after	Mar, Oct*	Microbes in the body	May	Warranties, extended, for cars	Feb
		Microwave ovens, medium	Apr (T,D)	Washing machines	Sep (T,D), Nov (U,T,D)